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EDITORIAL — SOME HIGH LIGHTS

General Economic Scene

State

Draft Perspective Plan Frame: The State Planning Commission has published the draft 12 year Perspective Plan frame (1972-73 to 1983-84) for Tamil Nadu. The objectives and strategy of the State Plan frame coincide with those of the Fifth Plan for the country as set forth by the Union Planning Commission and outlined in the section, **National**. *The objectives* of the Tamil Nadu Perspective Plan are:

(a) Doubling per capita real income by the end of the Sixth Plan. This will mean that per capita income will increase from Rs. 389 in 1970-71 to Rs. 778 in 1983-84 at 1960-61 prices or from Rs. 644 to Rs. 1,300 at 1970-71 prices. As the population of the State will increase to Rs. 5.3 crores by 1983, this will mean an increase of State income from Rs. 1,598 crores in 1970-71 to Rs. 4,144 crores in 1983-84 at 1960-61 prices or from Rs. 2,443 crores to Rs. 6,929 crores at 1970-71 prices. In either case this objective calls for a massive effort by the people as it involves a compound rate of growth of 7.6 percent per annum (compared to 3.5 percent rate of the last ten years).

(b) Provision of full employment. The estimate of unemployed persons in the State is 12 lakhs in 1971 which by the start of the Fifth Plan will rise to 16.5 lakhs. During the Fifth Plan 16 lakh persons will enter the labour force and in the Sixth Plan 19 lakh persons. The eradication of unemployment will involve productive activities providing employment during the 12 year period to some 47 lakh persons with all that involves for investment magnitudes.

(c) Attacking poverty in a selective manner. Sixty percent of the people are living at or below the poverty line. Their daily food consumption is around 1,500 calories, children and lactating mothers suffer from chronic mal-nutrition, the 60 percent illiterates and school dropouts are identical with this group who live in urban slums or rural huts with no access to health or hygienic facilities. This group will be provided through a mass distribution net work with the minimum wage goods (rice, dhal, kerosene, cloth, etc.) basic school and out of school education, health and housing facilities, protected water supply and special protected foods to ensure adequate protein nutrition to the vulnerable section of 30 lakh pre-school children and lactating mothers.

(d) Ensuring social justice. To promote social justice, land legislation, covering tenancy records and rights, Kudiyiruppu, rigorous enforcement of ceiling legislation and gradual elimination of absentee land owners will be undertaken to enable the small farmer to earn a living income; urban property ceiling, minimum wages and old age pension scheme will be developed and enforced. Programmes will be initiated to reduce imbalances between regions, communities and classes in the urban and rural areas.

(e) Accelerating the process of social change. To accelerate needed social change, voluntary organisations like the Prosperity Brigade, Youth Corps, the Guild of

Service and the many voluntary agencies will be mobilised to help in eradication of caste and communal factors which hamper growth and act against the dignity and worth of the individual. All social and economic forces which promote hierarchical arrangements in society will be investigated and legislative and voluntary action taken to correct them and promote modernity in social structures and attitudes.

(f) Promoting cultural activities and community participation in culture. Tamil music, drama, literature, poetry and the fine arts will be promoted in the rural areas to enable people to participate in community culture. Cultural centres, theatre groups, libraries, music festivals and poetry competition will be organised in Panchayat Unions, Blocks and Taluk headquarters. These activities will also be a means of humanising the economic growth programmes of the State and districts.

(g) Decentralising planning, development and resource mobilisation. Too much economic and social decisions and processes are centralized, making difficult the participation of the broad masses of the people. The evolution of democracy and the efficiency of planning and execution of development programmes will involve increasing devolution of responsibility of local bodies and communities in development programming and resource mobilisation. To this end the necessary legislative and executive measures will be undertaken.

The strategy proposed to attain these objectives will consist of investment on a massive scale in sectors and programmes which give a high growth response to the application of Science and Technology, and will provide maximum employment opportunities at once. Development of District Plan, identification of growth centres, regional planning and enlisting people's active participation in the planning process are the other planks in this strategy.

Under Agricultural sector, this will comprise extension of the "Green Revolution" to small farmers in rainfed dry areas, changes in cropping pattern through substitution of HYVs, multiple cropping, application of chemical manure, pesticides, better water management and exploitation of ground water potential etc.

In the sphere of Animal Husbandry, it will consist of the substitution on a large scale of non-descript cattle by pedigree animals, expansion of feed and fodder production etc.

In the sphere of Fisheries, it will comprise introduction of large sized mechanised boats, better marketing and storage facilities, development of fishing harbours etc.

In the sphere of Industries, the strategy will be concentrated investment on sophisticated industries which have high growth rate as well as acceleration of large industries such as the chemical complexes and the Salem Steel Plant and the complementary ancillary and subsidiary small industries with a high employment potential.

In respect of Power development, it is proposed to meet the increasing demand by construction of atomic and/or Thermal units at Kalpakkam, Tuticorin and Neyveli.

In the sphere of Transport, rail linkages will be provided to districts untouched by railways like Kanyakumari. Also an extensive system of road communications will be provided to all villages connecting them to nearest marketing centres. The development of ports, inland water ways and the Sethusamudram Project will also be taken up.

In the sphere of social facilities the strategy will include:

(a) mass production and distribution net work of wage goods to the poor majority living in villages, hamlets and city slums,

(b) a massive rural and urban housing and slum clearance and improvement programme,

(c) an education programme which ensures schooling to all Tamilians in the age group 6-15, with the provision of the equivalent of 5 years education to all children who dropout of school and illiterate adults, and a vocationalised employment oriented secondary education;

(d) health, nutrition and family planning services covering the entire State.

(e) provision of drinking water to all habitations and improved hygienic and sanitation facilities.

The centre piece of the Perspective Plan is *District Plans*:

Planning as a means of attacking poverty in the State and countering the ill fare of the poor sector, must be dencentralized; so that the particular problems that each group and area faces can be the basis of the area's development programme. Target Planning and Central and State indicative programming must be supplemented and supported by and in fact based on planning from below. Hence it has been decided that the unit of the Perspective Plan will be the development district. One chapter of the Perspective Plan will contain the district plans.

The State's 14 districts are each formulating a District Perspective Plan for the 12 year period 1972-73—1983-84. In fact though called district plans, each plan is based on the socio-economic factors at the Block level.

Each District has divided its planning area into a number of homogeneous sub-regions for each of which an integrated programme of projects is presented in

(a) Agriculture, Animal Husbandry, Forestry and Fisheries.

(b) Small and Cottage Industries,

(c) Roads, Minor Irrigation, Savings and Credit,

(d) Water Supply and Housing,

(e) Education, Health and Nutrition and Cultural Promotion.

But there will be no uniformity in the District Plans. The only common feature will be that each District Plan will aim at full utilisation of all the resources—human and material—of each homogeneous sub-region, overcoming its constraints and providing for its backward sub-regions and communities the minimum food, health, education, housing, drinking water and employment as a priority. But each sub-region will have its own priority. For some it will be provision of drinking water in those areas where there is no potable water supply, for some it will be village link roads in areas where the produce has to be marketed, for others it may be minor irrigation where multiple cropping areas and High Yielding Varieties of crops afford the best prospects.

Belief outlines of *sectoral development programmes* which sum up and complement the district plans are set forth on a state-wise basis in agriculture, irrigation, animal husbandry, forests, fisheries, cooperation, large and medium industries, village and small

industries, mineral development, power, railways, roads, inland water way, ports and harbour, education, science and technology, health, family planning, nutrition, water supply and drainage, housing and urban development, employment, welfare and tourism.

These programmes within the frame of districts and/or a State-wise basis call for a total outlay of Rs. 5390 crores at 1960-61 prices or Rs. 9000 crores at 1970-71 prices in the Fifth Plan Sixth Plans. This total outlay comprises :

Comparison of Plan outlay in 60-61 and 70-71 Prices

Particulars		*At 60-61 prices*		*At 70-71 prices*	
		V Plan	*VI Plan*	*V Plan*	*VI Plan*
		Rs. in Crores			
1.	State Outlay ...	706	1412	1200	2400
2.	Union Government's Outlay ...	442	882	750	1500
3.	Cooperative sector ...	88	176	150	300
4.	Private sector ...	528	1056	900	1800
	Total ...	1764	3526	3000	6000

While the State Government's outlay is sought to be nearly doubled from Rs. 600/- crores to Rs. 1,200/- crores and doubled again in the Sixth Plan the shares of the three Central Government categories (i.e. Centrally sponsored, Central investment on Industries and Central investment on Transport and Communications) are to be more than at the level of the past outlay in percentage terms. The private sector is roughly 30 per cent of the total outlay in each Plan period.

In seeking to double its outlay in the Fifth Plan and double it again in the Sixth Plan, the State Government depends on :

(1) Increase in domestic savings and restriction of conspicuous consumption.

(2) The natural buoyancy of the taxes;

(3) Improved tax administration;

(4) Better management of the sources of Non-tax revenue;

(5) Open market loans;

(6) Loans from the autonomous bodies; and

(7) Contributions by State Electricity Boards.

(8) Economies in non development expenditure.

But over and above these conventional resources the State Government can confidently look to the new plan strategy of combining production goals with distribution policies the decentralised efforts at planning and development to be undertaken, and the inspiring plan objectives it has set out to achieve for itself, as springs of resources that may fill the bill.

This draft plan frame is now open for discussion at all levels in the State Government, District Development Councils, Municipalities, Union Panchayat Councils,

Chambers of Commerce, Trade Unions, Universities and Colleges and Voluntary Organisations with a view to arriving at a consensus on the basis of which the State Planning Commission will develop the Tamil Nadu Perspective Plan. Bulletin readers are invited to write to the Commission or the Madras Institute of Development Studies stating their views and offering their suggestions on the objectives, strategy, programmes and levels of outlay and resource mobilisation that have been proposed in the Draft Frame.

Power Supply: The State faces a power supply problem, though nowhere as acute as that faced by Gujarat, Maharashtra, and Andhra Pradesh. There are several expressions of the problem. One is the erratic fluctuations in voltage which are probably the most disturbing, accompanied by periodic switching off of power during the day or night and low voltage. The Palani Hill temple which for example has had to stop at the busiest part of the day from 3 to 6 p m for want of sufficient voltage. It is not supplied with the minimum 340 V it needs during this period. The major reason for the power situation is, as pointed out in Vol. II Nos. 1 and 3 of the Bulletin, that the demand for power is fast outstripping supply. The rural electrification programme which is rapidly being completed and the energisation of pumpsets which is based on the pledge that the pumps will be used late in the evening when power demands are low but which are used during the day when the industrial demand is at its peak—all add to the excessive demand. On the other hand the supply of power in the State has been falling, Neyveli which has an installed capacity of 600 MW but which since April 1971 has been supplying only 450 MW gradually falling to 300 MW, was further reduced to 200 MW in April. On top of this reduced supply, Andhra Pradesh is requesting a share of this source as it is a Central project. Under these conditions there is need for a short term (immediate) and long term programme to increase power supply in the State. For the immediate present: (a) the commissioning of the country's first 110 MW generator in the Ennore Thermal Complex through the two 60 MW sets provides some relief. The other two sets should be installed and brought into operation as soon as possible, at least before the end of the year, (b) Neyveli which has increased its contribution to 300 MW should work nearer to its installed capacity of 600 MW, so that the demand of Andhra Pradesh might be fully met, (c) Kerala's supply which was providing 120 MW could be further increased to 150 MW; and (d) a second mine cut with a second thermal station at Neyveli is needed as explained in the industrial pointers section. In the long run, the supply to low tension consumers in the rural areas, particularly to agriculturalists, should be regulated through separate feeders for contiguous areas. In that manner supply could be staggered to grouped consumers at certain stated periods so that the users will have the power in the needed voltage at that time. For distant areas like Tirunelveli, Ramanathapuram and others, the real solution is to build generating plants in the southern region of the State. The Government's projects for a power station at Tuticorin and a second atomic power station at Madurai are an inescapable need and must be pushed forward as indicated in Vol. II No. 1 of the Bulletin.

Road Transportation and Safety: The State Government's plan for seven transport corporations for the management of nationalised bus passenger service is now in operation in a phased manner. They are Madras (Pallava Transport Corporation with Rs. 10 crores capital), Madurai (Pandyan Transport Corporation with Rs. 5 crores capital), Thanjavur (Cholan Transport Corporation with a capital of Rs. 3 crores), Coimbatore (Cheran Transport Corporation with a capital of Rs. 1 crore) and Kanyakumari. The aim of the

programme is to streamline the maintenance and improve the operational efficiency of the bus services and for this there needs to be a large scale educational and training programme and a constant renewal of managerial talent. The related project for a mass transit system in Madras city and environs is now in the study stage. 8 corridors have been established based on the travel desires of the people and field work is nearing completion on the North-South corridor which runs from Tiruvottiyur to Tiruvanmaiyur, a distance of 21.5 kilometers, which in two decades will have to carry one crore passenger trips. This mass rapid transit system could be underground or elevated or on the surface or all three as in Tokyo. The need for a circular railway has already emerged as the State Transport buses and sub-urban electric trains have reached saturation point. The authority for operating this system after the techno-economic studies are completed ought now to be engaging our attention. Neither the railway nor the other tranport authorities in the State can carry this load. Another related area is the development of national highway and trunk roads. The State has established the National Highways branch to concentrate large scale plan works on these roads to make them more transport worthy and safe. The quantitative aspect also demands attention. The State will be spending Rs. 37 crores on roads in the Fourth Plan, increasing the total roads from 40,398 miles to 48,434 miles in the five years, involving a road mileage intensity of 6 Km. per sq. Km.—which shows the long way we have yet to travel. All this is related to the broad problems of road safety in which the State faces a serious situation. The Automobile Association of Southern India's April Bulletin announces 51 accidents and 53 deaths in Madras city for March. In 1971 there were 5,200 traffic accidents, 184 deaths, 400 out of every 1,000 buses were involved in accidents. We have a mortality average of 8 per thousand vehicles compared to 0.5-2 in Europe. The April seminar on Roads and Traffic in Madras has made a number of important recommendations for improving road safety in the city and the State; These include traffic engineering and education, adequate driving tests after passing through Government approved driving schools, periodical physical examination of drivers of heavy vehicles, strict inspection of all vehicles which should be declared non-road worthy after 10 years, strictly enforced pedestrian crossing and wider use of guard rails, licensing of cyclists and cycle tracks, adequate stops of buses, regulation of way side advertisement and obligatory helmets fitted with safety frames for motor cyclists and accompanying women riders. These are needed and accepted standards which Madras city can and must be enforced by executive action.

Effluent Treatment: The Tamil Nadu Water Supply and Drainage Board is popularising in municipalities and panchayats three low cost methods for treating domestic and industrial effluents which have been evolved by the Public Health Department of the Engineering College, Guindy. The simplest method particularly suited to the Panchayats is the construction of a Rs. 10,000 2.8 lakh gallon oxidation pond with cement slab sides into which sewage is stored for six days and which prevents algae and algal cells from developing and which converts the sewage into a safe and stabilised effluent. Every municipality can use this method to treat its sewage effectively. The second method is the construction of a Rs. 10,000 30,000 gallon oval shaped oxidation ditch with a 2 H.P. motor which circulates and oxygenises the raw sewage fed into it so that through aeration the sewage is purified and the mineralisation of fresh sludge is achieved. This process should be used by factories, hotels, and hostels, cities and towns. The recurrent cost is Rs. 2 per day per ditch. The third method is the surface aeration method which is an enlarged and improved version of the second method and should be used in Madras city.

The treated effluents with their phosphates, nitretes and other minerals content can be used as good fertilisers in agriculture or for cooling and washing of machines in factories. This is an important break through in our poor and worrying sewage treatment problem in the State and should become part of the sanitation code and programme of all our local bodies.

Overdrafts : The worrying problem of overdrafts by State Government is once more to the fore. During the week ending April 7th it reached the record level of Rs. 666.20 crores, compared to Rs. 573.86 crores in the previous week and Rs. 516.60 a fortnight earlier. In April 7th, 1971 it was about half that and in July 2, 1971, it was Rs. 82.40 crores. Topping the list among the States is Andhra Pradesh, followed closely by Rajasthan, Mysore and Tamil Nadu. The immediate action is (a) not to allow any more unauthorised overdrafts from April 1, (b) study the ways and means position of each State, through a study group composed of the Union Planning Commission, Finance Ministry and the Reserve Bank and (c) for each State to repay 15 percent of the overdraft at the year end. But the long run problem is serious and has to be examined and solved by the NDC, advised by economists. The situation is a bit comical. The State has received Rs. 966 crores as loans from the Centre and is repaying Rs. 977 crores to it. The analysis of the problem and the solutions suggested in Vol. II Nos 3 and 4 of the Bulletin now needs to be translated into action. Part of the overdraft must be treated as a straight grant, another part as a long term soft loan and for the future the sixth finance commission should ensure a more equitable sharing of national financial resources between the Centre and the State.

Board of Revenue : The State Administrative Reforms Commission has recommended abolition of the Board of Revenue and its replacement by five commissioners for transport, excise, commercial taxes, land revenue and settlement (who would also be dealing with growing work on land reforms). The Commissioners will be secretaries to Government for the respective subjects and will function as a Board for specific purposes. The ARC has drafted the necessary bills to effect the progressive transfer of functions to the five independent commissioners the appropriate statutes for administration of land revenue and a tribunal for the adjudication of revenue disputes. This proposed reform is a good step in streamlining, simplifying and functionalising revenue administration and should lead to further unification and integration of these services with the rest of the administrative service in the State.

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National :

Fifth Plan : The goals, strategy and magnitudes of outlays and resources of the Fifth Five Year Plan, which starts two years from now in 1974-75, are beginning to be discussed in the Centre (the Union Planning Commission, Lok Sabha and Rajya Sabha) and in the States (the Planning Commission in this State and the Planning Boards in the other). The main agreed goal is to raise the level of living of the majority, living at or below the poverty line. The poverty line for the country is the consumption of 2,200 calories per person per day, which means Rs. 200 per capita per annum, in rural areas and Rs. 240 per capita per annum in urban areas at 1960-61 prices. The Union Planning

Commission computes that 40 percent of our people, that is 200 million—are living below this poverty level. This global average varies from State to State and previous issues of the Bulletin have referred to 40 percent of the rural people and 60 percent of the urban people in this State living at or below the poverty line. A similar agreement is emerging on the Fifth Plan strategy to attain this objective. Unlike our first four Plans where resource mobilisation from the public and private sector, from the upper income groups and corporate undertakings—public and private, has been used in growth oriented investment, in the Fifth Plan the mobilised resources are to be used directly to reduce unemployment and poverty as defined above and also to continue with the growth path. This strategy involves (a) a distribution net work which will provide the poor majority with wage goods. Discussion is now under way on what are the components of the basic wage goods package. What are their minimum norms? What is time period within which each of the components can be provided? What is the financial outlay that this package calls for? What are the financial procedures that will ensure that such outlays will be a first charge on mobilised resources? (b) The provision of basic minimum needs in education, public health, nutrition for pre-school children and lactating mothers, drinking water supply, rural home sites, rural roads, rural electrification and slum clearance; (c) the development of employment oriented programmes, minor irrigation, soil conservation, land and water use, through expansion of SFDA, MFAL, rural works, setting agricultural targets not only in crop terms but in terms of employment, diversification of agriculture through expansion and improvement of dairying, fisheries, forests and piggeries, the development of storage, transport, processing and marketing facilities, providing the small farmer with assured occupation and tenancy rights and credit, and, with the agricultural technology making the small farm economically viable, enforcing land ceilings for irrigated lands at 10-15 acres and for unirrigated lands at 20-25 acres. There will also be a redistribution of emerging surplus to the new class of farmers and landless labourers, (d) the maintenance of price stability of wage goods, such as food grains, cloth, oil, fuel, etc. (e) the termination of net foreign aid for general development by the end of the Plan period, through not contracting hard loans and borrowing only from IDA on soft terms and the development of indigenous technology and increased production of cotton, oil seeds, fertilisers, (f) the increase of irrigation from the present 15 million acres to 20 million acres and the doubling of power production from 20 million KW to 40 million KW, (g) all this means that the private sector will be producing more mass consumption goods through reordering their priorities and the public sector concentrated on the provision of infrastructural and social facilities to the poverty section. For this strategy the financial outlays under discussion include (a) the near doubling of the public sector Fourth Plan outlay of Rs. 15,900 crores to Rs. 28,000 crores, (b) the increase on employment outlay from Rs. 3,600 crores in Fourth Plan to Rs. 8,000 crores, (c) an outlay of Rs. 3,500 crores on the basic minimum of social facilities, (d) tax resources mobilisation of Rs. 6,000 crores to Rs. 7,500 crores (compared to Rs. 4,000 crores in the Fourth Plan) involving an additional annual average tax effort of Rs. 250-300 crores by the Centre and Rs. 150-200 crores by the States. This broad framework discussion at all levels should now aim at reinforcing these indicators and developing at the State and district level the corollary programmes and projects that flow from the agreed objectives and strategy.

Land Ceiling: General agreement has been reached among the States on land ceiling based on the recommendation of the Central Land Reforms Committee that for a

family of five the ceiling should be 10 to 18 acres of perennially irrigated lands with conversion ratios for other categories of land upto a maximum of 54 acres. The April meeting of Chief Ministers reached a five-point agreement on the exemptions from the ceilings—which has been the major loophole execution. Exemptions from the ceilings are accorded to plantations of tea, coffee, rubber, cardamum and cocoa, governmental bodies, co-operatives (an individual member's holding and his co-operative share are limited to the ceiling), industrial and commercial undertakings, Agricultural Universities and research institutions, religious, educational and charitable trusts and some relaxation for orchards. This State has a ceiling of 15 acres for irrigated land and 300 acres for dry land now in operation and is contemplating curbs on private landlordism in plantations. Madhya Pradesh has passed legislation setting a ceiling of 10 acres for an individual, 15 acres for a family of upto five, 18 acres for a family of more than five. About 8 lakhs acres will now become in that State available for distribution. Punjab and Haryana are proposing legislation for a ceiling of 7 hectares for irrigated and 20 hectares for unirrigated land. Bihar is proposing legislation with a ceiling of 27 acres for tube well irrigated land, 36 acres for unirrigated and 54 acres for hilly areas. Rajasthan proposes a ceiling of 18 acres for irrigated land and Mysore's ruling party is planning a 10 acres family ceiling on wet land and a maximum of 50 acres for other lands. It is planning to bring even plantations under some ceiling. Pending the adoption of ceiling legislation in the June session of the legislature, Andhra Pradesh has by the May 2nd ordinance forbidden all transfers of land. For urban property a family ceiling of Rs. 2 lakhs is being considered. Rajasthan legislation on ceiling on urban property fixes a limit of Rs. 5 lakhs for a family of five members with Rs. 50,000 for every additional member upto a maximum of Rs. 7 lakhs. The law will cover all towns with a population of more than 10,000. Bihar is also proposing similar legislation fixing urban property ceilings at Rs. 5 lakhs for a family of five. Madhya Pradesh has passed similar legislation on urban property ceilings of Rs. 5 lakhs. Land ceiling legislation—rural and urban—is now well under way. Its honest and adequate execution is now the crucial issue.

The National Production Front : Food grains production in 1970-71 rose by 6.7 percent compared to 1969-70 reaching 107.8 million tonnes. Production of wheat, bajra and maize established new records, rice production rose by 5 percent, oil seeds, groundnut, sesami, rope and mustard attained an all time record (bringing down by 10 paise vanaspati price). Cotton production increased substantially. Sugarcane and jute production declined. Preliminary harvest reports of food grains, cotton and jute for 1971-72 indicate a further sizable increase in production as referred to in the last issue of the Bulletin. Food grains are likely to be 112 million tonnes, cotton 66 lakh bales. This good agricultural performance is accompanied by several related issues, the issue is related to procurement prices. The ceiling limits on food grains procurement have been raised by 10 percent, credit margin has been liberalised, a Rs. 17.5 crores scheme for increasing storage capacity and share capital base of cooperatives has been launched and the recommendations of the Agricultural Prices Commission to reduce the procurement price of wheat has not been accepted by the Government and support prices for cotton has been announced. The rejection of APC recommendation to reduce the procurement price of wheat from Rs. 76 to Rs. 72 and increase the issue price from Rs. 78 to Rs. 80 per quintal will cost the National Budget over Rs. 130 crores plus the losses in storage which the consumer pays for. This is unjustifiable. Even after meeting the Bangla Desh food commitment of 7,65,000 tonnes of

which 7,50,000 tonnes was delivered by May, the food buffer stock is likely to rise to 10 million tonnes and some export of food grains is contemplated. This is a very different situation from the import of over 100 million tonnes of food grains by the country at a cost of some Rs. 46,000 crores in the last 25 years. A second issue is the urgent need to improve the communication infrastructure in the farming areas. Farmers without good roads have to incur high transport costs in purchasing their inputs and lose a part of the gain from the bumper harvest through the high transport cost. Further the spread of the new technology such as improved farm implements including the paddy rotary weeder, HYV seeds, fertiliser, application as well as access to the market and market price is retarded by lacks and bottlenecks in transportation. Third the need for water management has become insistent with the spread of the new technology. Of the 26 million hectare metres of ground water available from annual recharge, only about 11 million hectare metres are used through wells. The spread of HYV, multiple cropping patterns and tube well machinery production makes a more extensive and effective use of our underground water resources possible. This vast and perennial source for the continued health and growth of agriculture is important as we need to supplement our major and medium irrigation programmes, which since independence todate number 22 major and 339 medium at a cost of Rs. 2,305 crores serving 8.4 lakhs acres. The Irrigation Commission calculates that at a unit cost of Rs. 3,000 per hectare, the future major and medium irrigation works will cost Rs. 10,000 crore. An equal area is served by minor irrigation and underground water projects giving ausng irrigated area of 15 million acres which is to be expanded to 20 million acres by the end of the Fifth Plan as noted earlier, with the long term objective of coverin about half of our cropped area, that is 180 million acres by 1990. For this, the integrated use of both the river systems and underground water which the Irrigation Commission computes at 81 million acres, is needed and the large quantities harvested from water sheds, underground or streams that are now lost by seepage and evaporation from tanks, canals, distributaries and field channels have to be stopped. From this point of view the Irrigation Commission's recommendation for a National Water Resource Council on the conservation utilisation and inter basin transfer of water at the national level and this Bulletin's continuing plea for a State Water Board should be urgently acted upon. The State Board apart from acting for the Council on major and medium irrigation projects, can undertake technical exploration of areas to survey and discover new sources of water as is being done in the Thanjavur district, assess potentialities of existing areas, regulate the construction of new wells and their spacing, and propose and administer statutory controls to regulate tapping of ground water fed by the same acquifer.

Despite the low growth rate in manufacturing for 1971-72 analysed in the last issue of the Bulletin, 37 groups of industries which have performed well are classed under three heads. Large increases were registered in 8 groups, wood and cork manufactures, electrical machinery, metal products, rubber products, petroleum products, non-metallic minerals, chemicals, beverage and tobacco; moderate increases in 19 groups including machine tools, scooters, typewriters, flour milling, tyres and tubes, soap, aluminium ingots and conductors and phosphatic and nitrogenous fertilisers; in 10 groups production was maintained including newsprint, polyester and nylon fibres, soda ash, electrical steel sheets. The savings in foreign exchange due to the performance of these groups in 1971 is estimated at Rs. 153.76 crores (compared to Rs. 141.10 crores in 1970). Most of the groups belong to the small and medium sector. In a number of key manufactures such as cotton textiles, leather products, engineering products, and transport equipment there has

been a sharp decline in production—the disappointing performance of steel production involving a marginal increase of less than 3 percent (from 6.13 million tonnes of ingots in 1970-71 to 6.3 million tonnes of ingots in 1971-72) is now being corrected. For 1972-73 steel production is to be increased by one million tonnes, using 80 percent of installed capacity and the measures to be taken this year will increase production of 12 million tonnes next year and 19 million tonnes by the end of the Fifth Plan. This programme is based on project plans for the product mix of Durgapur and Salem, the expansion of Bhilai and IISCO by 4 million and 0.3 million tonnes, the crash and expansion programme for Bokharo involving 2.5 million tonnes by next year and the second stage of 5.5 million tonnes by the end of the Fifth Plan, the resumption of capacity production at Rourkela as the accident is now repaired, and further expansion at Durgapur. The steel demand for this year will require the increased production planned plus last year's level of imports. The related engineering industries also have performed poorly last year. HEC's production plans will enable it to reach the break even stage next year and the Mining and Allied Machinery Corporation continued to incur heavy losses last year. Engineering industries in general which last year produced Rs. 2,500 crores worth of goods, contributing 20 percent to national industrial production need rationalisation and improved performance. Statistics of growth in this area which are impressive are not a substitute for current poor production performance. The major problems which need attention in this sector are elimination of idle capacity and optimum use of installed capacity, the development of sophisticated capital goods and machine tools needed by the Country's industry and agriculture, now that foreign aid and imports are declining and are to be reduced, the farming out of the needed components to ancillaries with the quality controls, as Japan has so successfully demonstrated and the adequate and timely supply of steel and non-ferrous raw materials to this sector. Under these conditions this sector can lower its prices and meet the growing internal development demand for capital and consumer goods and machine tools and ensure the needed breakthrough in exports to help maintain the import level which declining foreign aid calls for.

Foreign Trade: The engineering units exported Rs. 116 crores in 1970-71 (a four-fold increase since the end of the Third Plan). The target for this year and next year is Rs 500 crores, (Rs. 200 crores for this year and Rs. 300 crores for next year) which is realisable and realistic, if the 17 categories of firms which are the main exporters increase their export component atleast about a quarter of the rate at which their total production is increasing. In the sixties these firms increased their production from Rs. 526 crores to Rs. 2,175 crores, that is a 40 percent average annual increase, but increased their exports by a mere 5 percent annual average, from Rs. 10.55 crores to Rs. 116.6 crores. Last year's shortfall in engineering exports by Rs. 30 crores means that this year's Rs. 200 crores target calls for a 50 percent increase. This ambitious target can be reached if the additional problems faced by the industry in the export front are met. The problem of the export subsidy to compensate for dearer imported steel has now been met by the decision of the Government to make available steel, indigenous or imported, at about the same prices in accordance with the recommendations of the Engineering Export Promotion Council. In addition the trade agreement which the United Arab Republic which has at last been negotiated (the U.A.R. is one of the major importers of our engineering products) and the measures that the R.B.I. and the Government should take to provide some insurance against large fluctuations in exchange rates; such fluctuations curb long term contracts with foreign countries and the development of trade with free currency areas. All these

should help considerably in meeting the current year's target. A further boost to the export front is the agreement signed with the United Kingdom for the increase in duty-free quota of handloom cotton products from one million to 8 million square yards per annum. The agreement also provides a wider coverage of varieties of handloom cotton fabrics. Also an annual 1,00,000 square yards of silk and loom products of silk will be for the first time admitted duty free. This agreement is of particular importance for the large handloom sector of this State as noted later and opens new vistas for its further development. Another export prospect is the Sri Lanka demand for 700 broad gauge railway coaches over a five year period, with a delivery this year of 140 coaches. Despite our own growing demand for coaches, this export demand should be met, and will be of direct benefit through the increased production at ICF to this State. The April Indian-Chilean trade agreement provides a new market to Indian exports of engineering goods, pharmaceuticals, textiles, and traditionals. So too the Rs. 60 lakh Kenya hydro electric project that India will be undertaking making a total of 4 such projects involving Rs. 1.1 crores. There are similar projects in Indonesia. The other face of our international trade, imports, registered a continuing rise, Rs. 1,582 crores in 1969-70, Rs. 1,625 crores in 1970-71 and Rs. 913 crores from April to September of last year 1971-72. The liberal import policy for the current year which has been announced adds 160 items to the banned list (last year 170 were banned) reduces 87 items of imports (last year 67 were reduced) and canalises 56 more items into the public machinery, and is in general a function of the accepted policy of increasing industrial production on all fronts, and the particular level of wage goods and the capital goods that it calls for. To make this policy form part of our development strategy, it is necessary not simply to rely on the intervention of the World Bank in rescheduling our debts and drawing down on our relatively comfortable exchange reserves, including SDRs, there is need for the export target of the current year to be achieved. It would also be necessary to base the execution of the import policy and specifically the nature and amount of each item imported on the gradual reordering of our production priorities referred to under the Fifth Plan section in this issue and Vol. I No. 3 of the Bulletin and the comparative cost structure of the import substitutes units which we are developing. There is the further criteria of the import package and its itemised break-down being functionally and closely related to the import content of our export oriented industries and export section of other industries as the necessary condition of really reaching our export target. This is not a policy issue but is one of execution and administration concerning rates of import replenishment of the concerned units, the cash subsidy programme etc. The evidence on administration indicates a need for a review and tightening of decision-making in the real and sole interest of supplying import items quickly and sufficiently but only to those who need the import component and deserve it on the basis of their net foreign exchange earnings.

Resource Mobilisation : As pointed out in the last issue of the Bulletin the current year's Governmental resource mobilisation will be a record. The additional resources that will be mobilised by the Centre will be Rs. 935 crores, by the States Rs. 305 crores, and Rs. 759 crores from revenues surplus, open market borrowings, small savings etc. giving a total of nearly Rs. 2,000 crores. There is in this analysis an underestimation of tax revenues, open market borrowing and small savings which may amount to an additional Rs. 200 crores. The new scheme of protected savings for small savers investing in post office cumulative time and recurring deposits in denominations of Rs. 5 and 10 has

both a welfare and mobilisation aspect. There is also general agreement recently expressed in the NCAER study on a progressive tax on agricultural incomes above a certain level both as a compensatory and resource mobilisation measure. The resource that can be mobilised from the tax on farm incomes would be of the order of Rs. 500 crores. Such a tax will also correct the existing inequity of the income tax system which is progressive in the urban and regressive in the rural areas. NCAER's Mysore study has shown that the income tax ratio in the urban sector increases from 10 percent in the lowest income class to 24 percent in the highest, while in the rural sector it is 9 percent and 6 percent. The tax burden on the same highest income group is for those in the urban areas thrice as those in the rural areas. The Raj Committee report should be the occasion for correcting this system. Third, there is the resources to be mobilised from the parallel (black) money economy. Finally the mobilisation of resources by the banks is proceeding satisfactorily. The growth of branch banks and the 5 point Plan adopted by Indian Banks Association to speed outstanding collections corrects the antideluvian procedures of operation and administration. It will lead to even higher level of funds with the commercial banks and with a reduction in Government deficit financing, and the engagement around 10 percent of their resources in food procurement, should add to the total resources for the execution of the current year's development plan.

Employment: The employment picture continues to be discouraging. The Union Labour Ministry statement shows that organised sector employment in 1970–71 increased in absolute terms and declined in relative percentage terms, compared to that of 1969–70. 3.8 lakh more workers were employed (the increase being from 170.7 lakhs to 174.5 lakhs workers), but the increase was 2.2 percent in 1970–71 compared to 2.5 percent for the previous year. The reason for this poor record is of course the stagnation and decline in industrial production during the year. Public sector employment increased from 2.5 percent in 1969–70 to 3.2 percent the following year, while private sector employment declined from 2.4 percent to 1 percent. Construction, electricity supply and distribution and trade and commerce registered satisfactory growth rates from 6.9 percent to 7.3 percent. In the primary industrial sector there was a decline to 1.6 percent and transport and communications to 1.2 percent. In mining, quarrying, plantations, sugar and forestry, there was an actual decline ranging from 3.3 percent to 0.5 percent. The service sector which in our economy contributes little to GNP and growth has registered high rates of employment increase. The live registers show a 22.2 percent increase in persons seeking employment (from 34.5 lakhs in March 1970 to 42.2 lakhs in March 1971), while the number of vacancies increased by a mere 3.3 percent. This is a microcosm of our employment situation with the number of employment opportunities in the organised sector increasing at around 1/10 to 1/7 of the rate of that of the labour force entrants. The incidence of the situation on educated unemployment was the heaviest. The live registers record a 26 percent increase in educated job-seekers. They increased from 18.22 lakhs in December 1970 to 22.96 in December in 1961, 12.97 lakhs being matriculates, 6 lakhs being undergraduates and 3.94 lakhs being graduates and post-graduates. With all the limitations of using live register records to compute unemployment figures, the trend is unquestionably worrying. Women job-seekers are also increasing at the same rate from 4.8 lakhs in December 1970 to 5.8 lakhs in December 1971. The records also show the frictions and imbalances and contradictions in our educated employment situation — the coexistence of vacancies due to apparent short supply of skills and the unemployment of those with those skills.

Indian Standards Year: 1972, the twenty fifth year of the function of the Indian Standards Institution has been declared the Indian Standards year. In the 25 years, it has issued 6,500 standards, and 3,000 licenses for 560 industrial and consumer goods to the value of Rs. 500 crores. Its standards for consumer articles including electrical appliances and equipment for domestic use ensure safety and quality to consumers. Its standards have helped to yoke the latest science and technology advances to industry and trade and the promotion of productivity and marketing. The year is meant to make consumers conscious of this important programme through their concentrating their purchases on ISI certified products and the use and implementation of its standards by large, medium and small industries. The Indian Standards Year is a call and challenge to extend the programme over the whole production and consumption system of the country.

Aid: The World Bank has recommended to the Aid India Club for 1972-74 aid to India of $ 939 million as project and $ 1,010 million as non-project aid. It has also recommended a debt relief of $ 200 million for each of the two years 1972-73 and 1973-74, which is a doubling of the past relief. For last year ending March 31, 1972, aid authorisations amount to $ 1,204.74 million (Rs. 900 crores) compared to $ 1,001.37 million in the previous year. Against the consortium pledges of $ 1,150 million (Rs. 862 crores) for the year, the agreements signed were for $ 695 million (Rs. 521 crores) the shortfall being due to the U.S. aid suspension. In this transitional period for the policy of self-reliance, the Government accepts aid offered without political conditions, proposes greater reliance on multi-lateral aid does not wish to increase the net aid over the past year, will postpone some new projects because of the suspension in U.S. aid, after seeking other sources and drawing down part of its reserves and use the aid received to continue existing projects. The World Bank's recommendation to the consortium is to maintain net non-food aid at past levels of $ 460 millions. Indications are that this target may not be reached even though all members of the consortium except the U.S. have indicated their aid for the current year in advance of the consortium meeting on June 12th in Paris. Switzerland has indicated an increased sum of Rs. 27 crores, West Germany Rs. 54 crores — the same as last year, France an increase to 150 million francs, Belgium an increase to 68 million guilders, Italy to $ 26 million, U.K. £ 54 million, Japan a higher amount than last year's with some $ 400 millions expected from IDA, provided its fund is replenished through U.S. Congressional legislation. The World Bank, which is playing a major role in arranging aid to the Five Year Plan, assumes no net U.S. aid for this year and next and that $ 266 million will be provided by the U.S. to cover India's debt repayments to it. The Indo-Soviet trade agreement is being revised to help India import additionally from the U.S.S.R. the industrial raw materials — copper, zinc, rolled steel, mercury etc. — that had been imported from the U.S. but is now not possible with no U.S. aids. India has contributed Rs. 4 lakhs for the current year, in addition Rs. 3 lakhs last year, to the technical assistance fund of the Asian Development Bank. The Government has decided to continue its policy of not borrowing from the Bank in order to increase the ADB resources available to other Asian countries.

Pollution: The National Committee on Environmental Planning and Coordination to which reference was made in the last issue of the Bulletin, is developing a programme of action for the Country. At its first meeting in mid-April, it agreed that the environmental deterioration of the Country was serious and that the programme can-

not be a replica of that developed in the affluent countries, as that would arrest the progress of the Country. In the Indian context the causes of environmental pollution are due to (a) natural conditions which must be identified and checked, (b) pressure of our population which must be regulated through family planning, (c) production activities for which control measures must be devised and (d) effects of some forms of technology which also can be controlled. The main environmental problems facing us are destruction of our flora and fauna, unsafe drinking water, unhygienic living conditions and the alienation of villages from their natural surroundings. Excessive use and misuse of fertilisers and pesticides, referred to in the last issue of the Bulletin, and the erosion of the forest resources of the country through continued reliance on fire-wood for fuels and our cultural mores and traditions are further aggravating factors. Above all, the environmental programme has not only the negative task of preventing pollution but of helping to develop our neglected biosphere. It is these many issues which form the programme of work being developed by the Committee, a task which must be executed by committees and organisations at the State and district levels.

Bangla Desh : Against reports in the last four issues of the Bulletin about India's aid to and cooperation with Bangla Desh in relief and rehabilitation, the return flow of Bangla Desh's aid to Indian development is beginning. The recent Indo-Bangla Desh agreement on power and water is one such. River transport between Assam and West Bengal via Bangla Desh is now possible. Steamers of the Central Inland Water Transport Corporation travel regularly from Gauhati to Calcutta via the Brahmaputra. Bangla Desh now becomes one of the major water-ways connecting two of our States. Under the Indo-Bangla Desh Power Board, Bangla Desh will be supplying 10 to 15 MW of power to Mizoram and Tripura and India will supply a similar quantum of power to the Western part of the Brahmaputra region of Bangla Desh which is short of power. For these exchanges, power links are being constructed between the areas. The Joint River Commission will regulate all problems of river control between the two countries and provide mutual help in the all important area of flood control. The Sylhet and Mymensingh area's susceptibility to floods is due to its being three meters above the sea level, while other parts are that much below the sea. Flood warnings from the 12 Calcutta centres and the Patna flood forecasting centre on Ganges floods will be a real help in this matter. Finally the long standing Farakka barrage dispute is now resolved with agreement on its design and location. These agreements are the start of a mutual two way programme of cooperation, wherein Bangla Desh's aid becomes crucial to the development of the neighbouring Indian States.

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International :

International Finance : The price of gold has risen $12 over the December 1971 revised price of $38 per ounce as part of the Smithsonian agreement. The dollar (U.S.) is being quoted below the floor in London, Paris, West Germany, Netherlands and Japan. The Smithsonian agreement, on exchange rates reported in Vol. II No. 2 of the Bulletin is breaking down and needs review and revision. Confidence in the U. S. dollar is affected because of its monetary and budgetary expansions prompted by internal growth needs, and its disturbingly large unfavourable balance of payments, which for 1971 amounts to

double that of 1970, at $21 billions. In this context questions are also raised as to whether there was adequate revaluations of the Mark and the Yen, with possibly the Pound being overvalued to start with and there not having been a sufficient devaluation of the dollar in terms of gold. The result is that large dollar funds are still pouring into Europe and Japan and the usual controls—lowered discount rates and exchange restrictions—are not working. What is now needed is a second, larger consultation among countries for a further reform of the monetary system. From this point of view, it is an important advance that the group of ten have agreed to constitute a group of twenty within the frame of the International Monetary Fund, which will include developing and developed countries and which will work on a comprehensive programme of monetary reform. The U. S. would like the group of twenty to work on both monetary reform and trade liberalisation. The other members of the group of ten (which are the members of the expanded common market) prefer to concentrate the work of the group of twenty on monetary reform and report to IMF and discuss trade matters in UNCTAD III, GATT etc. Here the United States position is sounder but with UNCTAD III now under way, the two questions will be jointly discussed anyway. The heart of the reform will centre around the replacement of gold, the dollar and pound by SDRs. International liquidity in the future will have to be assured by SDRs. In the two years since its birth, SDRs have established themselves firmly. 9.3 billion SDRs have been issued, 1.5 billion SDRs have been used, the largest users being the U. S. (484 millions) and the U. K. (119 millions). Netherlands has been the largest receiver, (408 millions), this being 350 percent of its total allocation. India's allocations are 226.8 millions and its use has been 78.5 millions SDRs. With this excellent start, SDRs can now form the basis for executing a wiser and more realistic arrangement on exchange rates. At the heart of the Problem is the weak U.S. dollar and its growing amounts in European and Japanese money markets. The new agreement should include a plan to save and reinforce the strength of the dollar, which is in the interest of all countries. For this a special issue of SDRs at a high rate of interest may be exchanged in return for some of the dollar holdings. Also a long term funding of dollars held by creditors at again a special interest rate should be arranged; and above all the U.S. should be required to make its contribution by curbing its deficit financing and monetary expansion policies. No country, however economically developed can last with a $20 billion payment deficit. It is against such a programme that a new 5 or 10 year programme of SDRs, weighted in favour of the developing countries can and should be developed.

Meanwhile as part of the financial crisis, development assistance both multilateral and bilateral is stagnating, due to the U.S. domestic situation and its international reaction. In late April, IDA reports that it has run out of funds to make soft loans to poor countries for high priority development projects. It is in the parlous position of having approved projects ($ 1,100 million), subject to the replenishment of its funds. It has been authorised to collect $ 2,400 million in this third round. The U.S. share for the first year is $ 320 millions and congressional approval is awaited before payment is made by its Government. There is some controversy over whether the U.S. Treasury authorities have not already the authorisation to make the payment and some quite unnecessary irritation and ill will is being engendered on both sides over this stalemate. Meanwhile the sufferers are the developing countries. India has high priority agricultural loan projects amounting to Rs. 400 million which are being held up and so too are programmes all over the world. The stakes here are high. They are the pledges and

solemn promises of the Second Development Decade. In this matter of IDA and bilateral cooperation the interests of all countries, rich and poor, point to the need to action which will move development assistance forward.

It is at this point that the second use of SDRs—as straight development assistance—takes on meaning. If the Second Development Decade is to be saved from the failure and frustration of the First Decade development assistance and cooperation needs to be placed on a stable, firm and long term basis. There is also need to effect now a better balance between bilateral and multilateral development aid. Thus the case for using SDRs as development assistance in addition to its international liquidity function is unassailable. The United States, whose aid performance in recent years has been widely varying, has supported this proposal and at UNCTAD III suggested that 2,000 million SDRs should be issued to developing countries as development assistance. Now the group of twenty should work out the techniques of operating this programme. First who should operate the system? One obvious way is that while the creation of SDRs should be the responsibility of IMF, their distribution should be the responsibility of the World Bank and the Regional Banks who are the multilateral capital aid bodies. This function of the World and Regional Banks involves their being responsible for the feasibility of projects and use supervision of project funds. Second the method of allocation to the different countries needs to be decided. This is a policy issue which the Governments should settle in IMF. One would be to follow the criteria of the IMF quotas for the individual countries, weighted by special quotas for the 25 least developed countries. Third the nature of the SDR loan—soft, hard or medium—should be decided. The soft loan method seems indicated. Fourth there is the technical problem whether there should be two forms of SDRs—one for international liquidity use and the other for development assistance or whether both can be performed by a single form. Finally the scheme should be so developed as not to diminish the will to and the need for bilateral aid. Both are needed and both must expand quickly. UNCTAD III and subsequent meetings of the group of 20 should provide the forum for significant international financial and monetary agreements.

UNCTAD III : Against UNCTAD III's general background outlined in the last issue of the Bulletin, the general trends emerging in its first four weeks of work are the statements of support by the developed countries for expanded trade and aid for the developing countries, agreement among the developing countries on the composition of the 25 least developed countries and a number of draft resolutions, together with the constitution of six committees. The President of the Executive Commission of the common market proposed that the Kennedy Round should cease to be a rich man's bargaining club, commodity prices should be stabilised and SDRs be allocated to compensate for the reserve losses suffered by the developing countries. Canada proposed that aid from developed countries be increased 1/3 from the current $1,500 millions to $2,000 millions and that it would soon adhere to GSP. The U.S. proposed using SDRs for development assistance, promised its early adherence to GSP and suggested that investment disputes should be settled by negotiation and arbitration in order to promote a proper climate for increasing private financial flows. West Germany offered a sizable increase in soft loans to developing countries, at 2 percent interest repayable over 30 years, with a 10 year grace period. For the 25 least developed countries the terms would be 0.75 percent interest with a 50 year maturity and a 10 year grace period. (UNCTAD II

in Delhi had recommended 3 percent, 24 years and a 7 to 8 year grace period). Japan proposed the use of SDRs for development assistance, pledged its adherence to GSP increasing the present level by 25 percent and raising its aid to 1 percent of its GNP. France proposed stabilisation of exchange rates, regulation of markets through commodity agreements and the prefinancing of buffer stocks. The Soviet Union pledged long term loans at low interest rates and their repayment through traditional export deliveries and other products from the developing countries together with increased supply of scientific and technological aid. FAO proposed that a 2 percent decline in the agricultural production rate of the developed countries, which now enables them to be 90 self sufficient, would increase the exports share of the developing countries by $4,000 a year. Sweden has offered to drop import restrictions on wine, grapes and tobacco and some other food items exported by the developing countries. Hungary and New Zealand asked for special arrangement by the Common Market to compensate for its exclusivity in relation to other countries. The general statements have been positive, with the basic position, of the third world—the group of 77 which is now composed of 96 countries—receiving general sympathy from the affluent countries. It is the coming weeks that will see whether these general expressions of support will or will not be translated into programmes of action.

Second one of the issues which has divided the group of 77—the composition of the group of least developed countries—has been settled by agreement among the group of 77. Selected on the double criteria of very low literacy levels and per capita incomes (below $100), it includes 16 African, 8 Asian and 1 Latin American countries. Third on the basis of the general support expressed in the general debate, the group of 77 has presented three resolutions to the conference under which the 25 least developed countries : (a) would be exempted from commodity agreements, quota cuts, payment of dues and subscriptions and the prefinancing of buffer stocks which should be paid by developed nations, (b) would be given top priority in multilateral negotiations on trade barriers, (c) would be further supported by developed countries dropping their domestic support policies and be exempted by the latter from border takes, customs etc. There are draft resolutions on IMF which take into account the views of the group of 77 on monetary reform, on the early reopening of the Suez and on aid to the third world in diversifying their economies. Another important draft resolution that has been submitted is one proposing a World Shipping Code. The recent fifth annual meeting of the All India Shippers Council has called for national and international stability in freight increases. It proposed limiting freight increases to once in two years and that inward and outward trade freight rates for the same commodity should be identical. At the international level, the liners conference has operated to the detriment of shippers from developing countries. Hence the UNCTAD draft resolution calls for regulation of maritime transport costs and freight rates and the establishment of a Code of conduct for an international shipping liner conference system. This will be the task of a 1973 plenipotentiaries conference to prepare the Code which when adopted will bind all Governments. The Code must promote world trade and a new structure of world shipping in which the merchant marines of developing countries play an increasing role ; freight rates should be consistent with the trade objectives of developing countries to whom a greater share of the cargo should be granted. UNCTAD is urged in the resolution to create a policing system to enforce the Code. Finally the conference has set up six committees on (a) commodities, (b) manufactures, (c) financing, (d) shipping and invisibles, (e) trade

relation among countries with different economic and social systems and (f) least developed and land locked countries. It is on the positive work and agreement emerging from these committies that the success of UNCTAD III will depend.

Agricultural Developments

Food Crops Strains: Further to the IR.24 strain reported in the last issue of the Bulletin the Tamil Nadu Agricultural University reports on the non-photo-sensitive, dwarf type, high yielding food grain quality strain, culture-1466 which is a cross between IR.8 and CO.32. Its yield potential is equal to IR.8, its medium fine grain and quality rice is like CO.32 and in addition it has high fertiliser response and non-lodging character. It can be grown in all three seasons, Kar (June to October) when the 1971 Kar trials showed a yield of 8564 Kg. per hectare; Samba (July-August to December) with a duration of 140 days and yield of 7943 Kg. per hectare; and Navrai (January to May) with a 120 days duration and yield increase of 4.8 percent over IR.20. Farmers in the State have reacted favourably to this strain and 100 trials in Chingleput, North Arcot, South Arcot, Salem, Tiruchy and Coimbatore districts have been programmed in the Navrai season this year. Another area where progress is being made is in the development of combined High Yielding and pest resistant varieties. HYV strains are not only particularly open to pests, they develop their major and minor maladies which become epidemics. The farmer faces a serious hazard in HYV and there is need therefore for a continuous pest resistant breeding programme in these HYV strains in the State. The three important paddy pests for which resistant varieties must be developed are the stemborer, gall midge, and leaf hoppers. Similarly the three diseases are rice blast, bacterial leaf blight, and rice fungi virus. Here the primitive varieties grown in the hills in this State and the North Eastern States have been found to contain several new resistance sources to these diseases and pests. The agricultural University could help combine its high yielding and breeding programme to evolve varieties which are both high yielding and disease and pest resistant, even if the duration is thereby lengthened a little. The total effect of these programmes is that the State, like the Country, is self sufficient in rice production, with a small surplus (for the State it is 3 lakh tonnes and for the country 3 million tonnes). But there is no room for complacency. In the case of rice, unlike wheat, we face first generation and second generation problems simultaneously. That is we have the first generation problems of extending this technology to our dry farming areas which are the majority, to the small farmers who will become our majority with the implementation of land ceiling legislation, and the second generation problems of storing, drying, marketing etc. The Civil Supplies Department for instance, announced that FCI purchased 4757 tonnes of rice under levy and 11,370 tonnes in the open market. The Departments' hulling agents having purchased 36,016 tonnes during Samba and Thaladi in Thanjavur district under the levy system will continue to use only the levy system. In the case of dry farming we have still a long way to go. Here the package of practices is still under study and demonstration. Better ploughing, and various water and moisture preserving techniques such as low cost reservoirs which can conserve and capture the precipitation, drip irrigation, the use of the appropriate fertiliser dose, the changing cropping pattern of which is now based on subsistence home needs to high yielding marketable products and crop rotation, oil seeds instead of rice during rabi and grains, and pulses in Kharif seasons, there are some of the practices that needs to be widely adopted in the dry areas of the State.

In this connection, once more the Tamil Nadu Agricultural University has contributed with new strains. CO 8 is a cross between the field beans DL 3196 and garden variety CO 5. It can be grown all over the State in all seasons, in dry areas as well as wet, its duration 120 days and its yield is around 10 percent more than CO 5. Another strain CO 10 ragi, with a 80–85 day duration, is non-lodging and non-shattering, fits into multiple and relay cropping and yields over 50 percent compared to the traditional CO 8. A third strain just released CO 2 samai, with 80–85 day duration can be grown plentifully in the dry areas of Dharmapuri, Salem, Coimbatore and Tirunelvelli. A fourth strain is POL 2 groundnut referred to in Vol. II No. 2, with a duration of 105 days has a 25 percent yield compared to the existing POL 1. A fifth new cotton strain MCU 7 evolved irridation from a multiple crossing of MCU 2, CO 3 and CO 4 can be grown in the rice fallows of Tiruchirapalli, South Arcot, North Arcot, and Chingleput and yields nearly 40 percent more than the existing variety. A sixth fruit strain CO 1 sapota can be grown in all suitable regions, with a 40 percent increase in yield. Similar results can be expected from the Changam farm where results on varieties of seeds of sunflower, cumbu, cholam, groundnut and cotton will be available this year.

Aduthurai's Central Banana Research Station is similarly serving the banana tracts in the State and the Country. 5,460 hectares of padugal land in Thanjavur district, high level silt deposited dry stretches along the river banks, grows the "poovan" and "monthan" which have been researched and improved at the Centre. Now with well irrigated banana cultivation the centre has been working on improved poovan and cavendish clones under irrigated garden cultivation. As a result of manuring trials by the Centre for both wet and dry banana cultivation in Tiruvayura and Budalur blocks, using balanced NPK fertilisers on saleable leaves, fruits and suckers, an additional fruit yield of 7,000 kg. per hectare, a total yield of 64,326 leaves per hectare involving an additional income of Rs. 1,375 and a 26 percent increase in sucker production, giving an additional Rs. 130 income, have been registered. Research results on the use of fertilisers on coconut are also being widely applied in the State. The usual fertiliser wood ash mixed with farm manure has produced a greater quantity of fruit. With potash doses, seedlings grow quickly and robustly and start bearing fruits in five years. Potassium also helps the tree to withstand pests and drought and increases the nuts and copra by 100 to 150 percent. It is necessary for the Tamil Nadu Agricultural University to apply these findings to the different coconut growing tracts and soils of the State.

Tea : The declining tea production in the State and the South was analysed in the last issue of the Bulletin. The drought conditions in the tea regions have continued into April and a further decline in production is feared. On top of the drought, tea plantations have been hit by inadequate fertiliser supplies. Against an annual requirement of 60,000 tonnes, an indent of 46,146 tonnes for April–June 1972, the current allotment is only 9,540 tonnes. The most serious shortfall is in the supply of sulphate of ammonia and the industry holds that its substitute of urea will lead to lower output. The Union Ministry of Agriculture should ensure regular supply of fertilisers to the industry. The latest tea auction results reflect all these factors. Prices of leaf and dust grades are higher than in 1971, a marginal increase in exports despite the reduced total supply and constancy in sales percentages through auctions are noted. There is a special problem faced by the small unit among growers and factories. The 19,500 small growers and 72 small factories who buy their leaves from the small growers and who form 1–15 percent

of the tea industry in the Nilgiris face the usual problems of the small farmer. They need first an extension service which will bring them the benefits of the latest technology and so increase their productivity. Second they need a more rational fiscal system so that they are not classed under Zone IV of the large plantations with a high excise duty. This could be achieved if the duty is excised on an ad valorem basis. With the plans announced by the State Government to promote the small unit in tea industry, this fiscal reform becomes a necessity.

Coffee : The status of coffee production for 1971-72 referred to in Vol. II No. 4 of the Bulletin indicated an urgent need for development credits for the industry. The report of the Coffee Board shows that upto the middle of February, 1972, it made development loans for intensive and expanded cultivation to 1158 growers to the value of Rs. 1.12 crores. 106 loans were given to the value of Rs. 53.73 lakhs for replanting schemes. Most of the plantations in the State have not been touched by these programmes and there is need for doubling their value. The Board report also explains the reasons for the large margin between the pool selling price of coffee and the price and the retail price paid by the consumer. The pool selling price is arrived at by dividing the total sale proceeds of the pooled coffee, less administrative expenses, by the total quantity sold. The difference between that price and the price received by the grower is due to the excise duty, pool expenses and undisbursed pool payments which are later disbursed. Expressed in points, against Rs. 4.41 of sale value, the grower receives Rs. 4.37. The other difference is that between the auction price and the retail price paid by the consumer. Here the average price realised by the pool is 74.6 percent of the retail price paid by the consumer as 12.6 percent of the retail price is the excise duty, 6.7 percent the sales tax, 1.5 percent the wholesaler's profit and 2.4 percent that of the retailer. In both the cases the differences are due in the main two taxes.

Fertilisers : The declining trend in the off-take of fertilisers referred to in the last issue of the Bulletin is now reported to be also due to short falls in its most important component the nitrogenous fertiliser, uneven distribution of the produced stocks and transport bottlenecks. The demand in the State is steadily rising with the expansion of HYV and multiple cropping, and in fact with timely and adequate supplies of fertilisers and pesticides, the State's production of rice could be increased from 72 lakh tonnes to 100 lakh tonnes. The first task therefore is to ensure steady and increasing fertiliser output and for this the new projects at Cochin, Goa and Durgapur which account for the prodution of 4.6 lakh tonnes of nitrogen should be speeded. Second the obstacles to capacity production faced by existing units in the way of power supply, labour disturbances and transport shortages need to be straightened out. In this regard the performance of Madras Fertilisers which is producing upto its rated capacity and the increase in the output of the Coromandel Fertilisers by 12 percent to 2.47 lakh tonnes in 1971 despite its equipment take breakdown and fire accident, are satisfactory. Third as pointed out in the last issue of the Bulletin it is essential in that the Government and the producers and distributors should every action agains the growing adulteration of the fertilisers that are actually supplied to the farmers. For this the producing units should themselves take responsibility for distribution as Madras Fertilisers is doing and checkpoints by Government and Agricultural University should be established as suggested in the last issue. Fourth as the Government has decided to accede to the request of the farmers to give up aerial spraying, a special effort

must be made with the State's 9,000 power sprayers and 25,000 hand sprayers to fill the gap. That gap is wide. While aerial spraying can cover 2,000 acres per day, power sprayers can cover only 5 acres per day and hand sprayer can cover 2 acres per day. The problem is both quantitative, the vast gap in area covered to be made up, and qualitative, how power and hand sprayers can most effectively control pests. For groundnuts, spraying must be completed 7 days after the emergence of the red caterpillar and surul poochi in August over an area of 15 lakh acres in North Arcot, South Arcot and Chingleput. In mobilising all sprayers for this purpose, the spraying of 30 acres of paddy in November and 3 sprayings of HYVs, IR. 8 and 20, must be ensured. Incidentally for the farmer the cost of power and land spraying is Rs. 5 plus the cost of chemicals per acre. In aerial spraying, the cost to him is only Rs. 5 as the Union Government pays for the chemicals. Last year the State received Rs. 66 lakhs for this purpose. The question of aerial spraying should therefore be further studied. In addition development research is urgently needed in this area. A further useful suggestion is the setting up of a pest protection fund to undertake continuous research in plant protection methods and to provide qualified persons to take up preventive and curative measures in respect of plant diseases.

Credit, Water and other inputs and prices: Credit supply to the small farmer registered some pluses and minuses in the State. Thanjavur district's 50 rural branches of the nationalised banks having extended liberal credit facilities to the small farmer and face a serious problem of collection—largely due to inexperience and procedures on both sides. Their deposit mobilisation is limited as the large landlords use their surplus resources to make loans at high interest rates or invest them in chit funds and other non-nationalised institutions. The nationalised banks must however extend and expand their loan facilities to the small poor farmer and for this the branches should be adequately housed and staffed in order to develop adequate relations with the small farmers, learn methods of estimating costs and production and input needs. The banks should have recourse to the Revenue Recovery Act for recovery of dues, should make loans on approval of the Panchayat Unions, which could help in both diffusal and recovery of loans, and should develop procedures for the borrower to deposit his produce with a mutually agreed procurement agency. To help the rural branches develop further, they should be the banking agents of the local bodies and should be primary credit suppliers to the small individual farmers, while cooperatives and land development banks, finance markets. storage etc. The State Government's plan to develop a single agency for distribution of fertilisers, seeds and loans to the small farmers will solve many of the take off problems now faced by the rural branches of the nationalised banks and the recently started SPDA and MFAL in the State. IADP and IAAP have so far not touched the small and dry farmer and he is the poor majority in the State and Country. In fact the agricultural production breakthrough has resulted in some polarisation of the large and small farmers and displacement of tenants and share croppers. The strength of the new agricultural technology demonstrated in experiments and studies is that it places the large and small farmer on the same footing in net income per acre. The studies also show that the small farmer is as eager to use the new technology as the large farmer. Hence the institutional and infrastructural modification now proposed for providing the small and dry farmer speedily with the credit and inputs that he needs, for setting up dairies, chilling plants, feed for poultry and cattle, and Rs. 10 lakhs loans to District Central Co-operative Banks to make available the input subsidies to the small farmers are moves in the right direction. The Union Government's State Farms Corporation has offered

district help to the State Government in its land gift and distributing programme, through developing the gifted land and collecting the cost from the produce in easy instalments. The State should also use the facilities of the Corporation in loans to the small farmers, which replace the landlord cum moneylender, in cooperative mechanised farming, in the setting up of agro-industries to increase the small farmer's income, in helping agricultural graduates to set up consultancy services and in running short term courses for the farmers in modern agricultural techniques. Thanjavur district is making a start in both supplementing the small farmers' income and providing quality through protein of animal origin, which the small farmers' diet badly lack. At Orathandu, Kumbakonam, Nagappatinam, Pattukottai, and Mannargudi, small farmers have formed Poultry Breeders Associations and with loans of Rs. 1,000 to Rs. 5,000 per member from the District Cooperative Central Bank at Thanjavur have begun poultry farming, using the deep litter system to breed high yielding pure line Australian 'M' strain, white leghorns, Hyeline, Arbor Acres etc. The breeders association provides the farmer with markets and inputs at reasonable prices, so that he earns Rs. 250 per month, provides employment to egg collectors and sales agents and quality products for the consumers. At Tirukattupalli, Mannargudi, Thiruthuraipoondi and Poorayar, Pork Clubs have been formed to rear yorkshire pigs which can be bought from the Government Piggery Farm at Eachenkottai at Rs. 2 per kilo and the pig can be sold at the age of five to eight months for Rs. 160 to 180. A further programme is the development of milch and draught cattle in the State. The Committee of Estimates for Animal Husbandry in Tamil Nadu points to the little use made of the Union Government's intensive cattle development scheme. We need good draught cattle to back up the new agricultural technology and we need milk to meet our protein hunger. Here again Thanjavur has made a start with imported bulls of Red Dane, Brown Swiss and Jersey Bulls. Nilgiris is another area where the movement can develop for both Thanjavur and Nilgiris provide the kind of fodder these quality cattle need. Through artificial insemination and prevention of cattle diseases, the farmers all over the State can improve their cattle wealth and the diet and health of the community. The recommended cattle health insurance programme based on the dairy farmer paying one paise per litre should be launched in the State as part of the cattle improvement programme.

The summer is exceptionally warm and dry, with no summer rains and already pockets of drought are beginning to appear. Parts of Perambalur, Ariyalur, Udayarpalayam and Jayankondam in Tiruchirapalli districts and parts of eastern taluks in Chingleput are experiencing drought conditions and drinking water scarcity. There is need in these cases immediately to help the farmers to deepen their wells. The case of the 15 community wells in Tirumangalam area in Madurai district built at a cost of Rs. 3 lakhs and lying unused for 2 years because power cannot be supplied to them, as they belong to the community, whereas power can be given only to an individual is the kind of incomprehensible red tapism which should be remedied quickly by changing the Electricity Board regulations. Meanwhile the farmers there can form cooperative societies, construct more wells and obtain the power needed to irrigate about 50 acres from each well and so overcome the dry spell in the area. Another measure which will meet the irrigation needs is the release of water from the Aliyar reservoir for 5460 acres in the ayacut in Vettaikaranpudur canal, and for 23,700 acres in the Pollachi canal.

The stabilisation of prices of food grains and articles in the State will be ensured by the Tamil Nadu Civil Supplies Corporation which was registered at the end of April

and by the enlarged functions of the Food Corporation of India. The Tamil Nadu Civil Supplies Corporation is taking over 13 modern rice mills to hull paddy procured and purchased by it. It is building a buffer stock of rice for distribution at reasonable prices to the consumer, particularly when there is a rising price trend. The complementary activity of FCI in procuring and selling pulses, edible oils and food grains is also a price stabiliser, especially for the poor majority in the State. As seen earlier, the breakthrough in rice production raises the problem of ensuring proper prices to the producers and fair prices to the consumers. The FCI fair price shops and those of the Tamil Nadu Civil Supplies Corporation can link the producer and consumer directly, replacing the wholesaler. In fact the state Government's suggestion that FCI supply its wheat directly to the retailer in the State, and not as at present sell it first to the State Government at 78 paise per kilo, which is then sold to consumer at 98 paise per kilo, is a practical suggestion. It will bring down the price of wheat by atleast 10 paise. In addition it is hoped that the FCI will make bulk purchases in other States of blackgram, bengal gram, chillies in addition to pulses and oils for sales here and bulk purchase from this State gurs and other surplus items for sale other States.

Land Reform and Debt Relief: The Tamil Nadu Land Reforms Third Amendment Bill which comes into force as of 1st March, 1972 has been referred to a Joint Select Committee of the Assembly and Council under which the exemptions from land ceilings enjoyed by trusts are to be withdrawn under the following conditions: (a) the patta land owned by religious institutions will continue to be exempted, (b) so too will the 60 standard acres granted to seven specified colleges and 20 standard acres to 10 named high schools; (c) two hospitals, the Mahatma Gandhi Memorial Sanatorium at Sengipatti and the TB Sanatorium at Perunthurai are allowed to keep the land owned by them on 1st March, 1972. All other trust lands come under the 15 standard acres ceiling. The Select Committee is touring the entire State in the months of May and June so that it can see for itself the misuse of trusts and on that basis define trusts more precisely in the statute. The general aim of the State's entire land reform programmes is to remove absentee landlordism and give the cultivator the ownership of the land that he tills. A second bill, the Agriculturalists Relief (Amendment) Bill has also been referred to a Joint Select Committee of the two houses. A counterpart to the debt relief bill for wage earners etc. referred to in the last issue of the Bulletin, this bill gives relief to the indebted agriculturalists in the State. All debts in cash and kind secured or unsecured due from an agriculturalist are to be liquidated by the bill. The bill does not cover fair rents payable under the Tamil Nadu Cultivating Tenants Act of 1956 or any tax or cess payable to the Government or to dues to the cooperative societies and banks. The bill will go into effect when notified in the Gazette. The Thanjavur Mirasdars Association has appealed to the Government to exempt them from agricultural income tax, kist and cooperative dues because the bill will reduce their incomes. They also have asked that the farm wages recommended by the G. P. Commission should be continued and that there should be no increase in wages as demanded by the agricultural workers. The agrarian reform in the State is now well on the way and in its implementation, the issues are clearly joined.

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Industrial Pointers :

Small Industries : The State has today 22,231 registered small scale industries. This is more than a sevenfold increase during the decade (in 1960 there were 3,000). There are about an equal number of unregistered small units. Small industries constitute around over 90 percent of all factories registered uuder the Factories Act. For the Country as a whole there are over two lakh registered small factories, employing about 10 lakh workers and contributing about 26·5 percent of the total factory sector production. In this small industry sector, industrial estates form a special group especially in this State as outlined in Vol. I Nos. 6 and 7 and Vol. II Nos. 1 and 3 of the Bulletin. The small industries covering all fields, mechanical engineering, chemical, electrical and electronic and food processing—serve as ancillaries to the 200 medium and large scale industries in the State. In the mechanical engineering field the main units are automotive components, pumpsets, machine tools, bicycles and in the chemical industry they cover a very wide range, - paints and varnishes, pharmaceuticals and drugs, rubber and elastic products, soap and cleansing powder, plastic and polythene, paper products, food products, vegetable oils, chemicals and fertilisers. The main problems faced by this important and growing small industry sector are raw materials shortage, inadequate finance and limited marketing facilities. It is to meet these problems that the State has set up various developmental and promotional organisations like Tamil Nadu Industrial Development Corporation (TIDCO), State Industries Promotion Corporations (SIPCO), Small Industries Development Corporation (SIDCO). A further institution, the Small Projects Service Organisation has been launched in April which starts its activities in the industrially backward areas of Chingleput District and canalises aid and assistance from Governmental, para Govermental and the private sector to the entrepreneur in the private sector. One of its innovative functions is to seek out and promote entrepreneurial talent in small industry. The entrepreneures identified will be encouraged to invest in one small industrial unit. It will also mobilise capital resources from prosperous farmers, lottery winners and others. Its plan includes the setting up of ancillaries in connection with the oil refinery, the fertiliser complex and the atom power station in Chingleput district; SIDCO is planning to increase its total pool of iron and steel material for distribution to small units from the present 22,000 tonnes of iron/steel, 1,200 stainless steel and billet rollers in the first year to about two and half times for the second year. It has requested the Union Government to increase its allotment from the present 5 percent of the total raw material demand of the small industries in the State to 13.5 percent. SIDCO is also streamlining and tightening up its distribution procedure to eliminate all bogus and benami licenses and firms, which receive part of the material and sell them at black market rates. In this, the operating industries also should take action, as it is in their own interest to weed out this speculative element. Within theframe of the Small Industries Service Institute, the Central Footwear Training Centre is being set up at the SISI campus in Guindy to assist in the establishment and expansion of small modern units in manufacturing export oriented finished leather goods. The assistance of them will be in the renting of sheds, theprovision of equipment and training of skilled personnel and managers. The leather industry's export target of Rs. 50 crores for this year can be attained if small industries enter the field, use modern footwear machinery, which the Government should import and help in export marketing. Such a small industry programme in leather can be part of the technician and technocrat employment programme and has large employment potential, as it is not capital intensive. The

Salem Steel Plant is another major industry where plans are being drafted by the Union and State Governments and their relevant agencies to establish ancillaries within the small industries sector. For this purpose training programme for engineers have been launched and projects and feasibility reports on the Salem ancillaries are being drawn up in light of the Salem plant consultant's report.

New Industrial Initiatives: At Arkonam a sponge iron plant at a cost of Rs. 9 crores will be set up by the Tamil Nadu Industrial Development Corporation (See Vol. II No. 2 of the Bulletin). The Union Government has approved the project and issued a letter of intent to TIDCO. The scrap based plant is valued at Rs. 7.5 crores and will start with a 50,000 tonnes capacity. This capacity will be doubled within four years. The plant as ancillary to the Arkonam Concast (see last issue of the Bulletin) will produce sponge iron from ore for feeding the Concast Plant, as an alternative raw material to the scrap on which it otherwise relies. As explained in the last issue the supply of scrap is somewhat tenuous and uncertain and this ancillary raw material source is a welcome relief. The plant has also important employment potential. The unit's requirement, power which is serious in the case of Concast, will need watching.

In the cooperative sector, a paper mill factory society is to be set up in a backward area in the State and a letter of intent has been issued for it. The sector operates 13 modern rice mills, 36 rice hullers, 25 groundnut decortication and 18 cotton ginning factories. In addition the Thanjavur cooperative Marketing Federation has started a rise bran oil unit at a cost of Rs. 20 lakhs and the Tamil Nadu Cooperative Marketing Federation which runs the Rs. 25 lakhs, 45,000 tonnes per annum Mannargudi granular fertiliser plant is planning three more manufacturing units, a vanaspati plant, a groundnut oil unit and a topioca factory. The role of the cooperatives in the State's small industry planning and development is rapidly increasing. Another area where plans reported in Vol. II No. 1 of the Bulletin are now becoming operational in the electronic and instrumentation infrastructural facilities for small industries. In the industrial estate located in the technological complex at Adyar, four of the 45 factory units of various sizes have started operations, producing electronic and instrumentation components, sub-assemblies and final assemblies, ranging from record players to 25 inter-communication instruments. The estate sheds have been specially constructed for this industry to be free from noise, dirt and radio interference. The State government plans an innovation in building the Country's first certification, test and product development laboratory to ensure that the factory products in the State conform to international and national standards. Also a service centre for repairs and maintenance of the specialised electronic and instrumentation equipment of the factories is being set up by the Government, with the help of the Pilani Central Electronic Research Institutes, located next to the Indian Institute of Technology and College of Engineering, the Industries will have access to their testing and consulting. The estate will be one of the important areas where the technician employment scheme will generate growing opportunities to entrepreneurs and craftsmen to set up small units. It will employ around 2,000 highly skilled and semi-skilled craftsmen and will act as an ancillary to the large electronic complexes in the country, such as Bharath Electronics, Indian Telephone Industries, Electronic Corporation of India, Hindustan Teleprinters and the Thumba Station. Besides it will be turning out some of our most sophisticated electronic instruments.

Industrial units in the planning stage are TIDCO's Rs. 35 lakhs factory for the manufacture of 40,000 TV. sets per annum and components for T. V. sets. It is also planning a Rs. 2.60 crores factory for the manufacture of ammonium fluoride at the rate of 3,600 tonnes per annum. Madras Amalgamations is negotiating with Yugoslavia and U.A.R. for a plant for producing a new type of tractor—IMT 558. The Union Government is examining the establishment of seamless steel making factory as an ancillary to Concast at Arkonam or Salem Steel. Another project in the discussion stage between the Union and State Governments is the establishment of a Rs. 20 crores Titanium factory in the State. The raw material is located in Manavalaikurichy in the Kanyakumari district, from where the sands are being exported to Japan. The Kodayar hydro-electric system can supply power at concessional rates for the factory. It is a project with great employment potential for the State.

Salem Steel: Further to the detailed report on the Salem Steel Plant, based on the Consultants' report and the first decision of the Government, as set forth in Vol. II No. 4 of the Bulletin, the Union Government's decisions after a detailed analysis and review of the consultants' report has now been made. First the Government has decided to proceed with constructing the plant immediately as the cost of the plant is about half of that to be established at Vijayanagar and Vishakapatnam. The detailed costing of the Salem Plant shows that with a 1.95 tonnes capacity, it will be Rs. 336 crores (and not Rs. 286 crores as reported in Vol II No. 4 of the Bulletin). The other two steel plants with a two million tonnes capacity each, are estimated to cost over double, Rs, 750 crores each, and are therefore being subject to further study. Second the Salem product mix now decided is 70,000 tonnes of stainless steel, 75,000 tonnes of silicon steel, 30,000 tonnes of other special steel and 24,000 tonnes of mild steel (again a little different from the previous report). Third it will use nut coke from other steel plants as reductant and employ economical production techniques. It will use electronic smelting for iron, the LD process for alloy steel and continuous casting for slabs and blooms. Fourth the reliance on Kanjimalai ore and non-reliance on Neyveli lignite is confirmed. Fifth on this basis, the plant will break even at 88 percent utilisation, with a 4.8 percent initial rate of return. Finally the commissioning of the plant is now back to 1979 and not 1976 as hopefully forecast in the April issue. The State Government has announced that the land acquisition for the project has been completed and this year's budget allotment of the plant's share of Rs. 7 crores for all 3 Southern plants can now be fully expended.

Neyveli: Reference has been made earlier (see section **State** under **General Economic Scene**) to the need for a second mine cut at Neyveli which will enable a second 600 MW thermal plant to be established to meet the growing power shortage of the State. This latter has been analysed and explained also in Vol. II No. 1 of the Bulletin. The case for a second mine cut at Neyveli may seem weakened because of the problems faced by the first mine. These problems are due to faulty and outdated equipment in relation to known modern techniques as explained in Vol. II No. 2 of the Bulletin and their resolution will be the major outcome of the Subramaniam Committee (See Vol II No. 4) The Committee will pronounce on the request for the Rs. 18 crores loan made by the Corporation to modernise its equipment through purchase of certain types of sophisticated equipment and the needed spares for the bucket wheel excavators. The Ministry of Mines which is responsible for the Corporation has so far refused this request.

because it wants first better performance which will be nearer to capacity, while the Ministry of Power and Irrigation which realises the key role of the Corporation form the Country's power supply is seriously considering in making the Neyveli thermal plant coal based. This would be overly costly, at Rs. 50 crores and is yet another tragic case of two ministries working at cross purposes, using different criteria for their judgments. The starting point for the Government should be to follow up the recommendations of the Subramaniam Committee and make the operation in the present mine function effectively and economically by providing it with the needed equipment. There is no case for replacing lignite by coal in the thermal plant. The second problem affecting the Corporation is continued labour unrest over the last two years. The go slow organised by some workers in April-May, is due to their grievance about the system of promotion in some sections of the Corporation. The State Government's intervention has been effective in preventing wide-spread labour unrest in the Corporation. There is need for an agreed machinery such as a commission to study with the unions and management the whole range of labour problems in the complex and make detailed recommendations that will bring industrial peace. The case for the second mine cut at Neyveli is thus unaffected by the exogenous factors affecting current mining operations which are all susceptible of resolution. That case briefly is: (a) the State has faced a power shortage now over the past four years, making it an irreversible fact under current supply conditions. (b) For the future, the current deficit of 370 million units of generation capacity and 570 million units in energy supply will by 1980-81 increase to 3073 millions in generating capacity and 9670 million units in power supply (see Vol. II No. 1 and Vol. I No. 7 of the Bulletin). (c) The purchasing of power from the neighbouring States—Kerala and Mysore—is subject to both wide variations and termination. In 1971-72 because of the low storage at Sharavati, Mysore was able to supply this State only 190 million units; while in 1970-71, it provided 728 million units. This 400 percent variation is too wide a range for the State to find compensating other sources. For this year Mysore is not able to provide any power as it is contributing to the even more serious power shortage which Maharashtra and Gujarat are facing and has further informed this State that in the future, its own internal power needs will be such as to give it no surplus to sell to this State. Kerala is also likely to be in the same position. (d) The State Government's request for a second atomic power plant in the Southern region of the State is not likely to be granted by the Union Government, as the similar demands of Gujarat and Uttar Pradesh which have no atomic installations have priority over that of Tamil Nadu. Even the request for two more units in Kalpakkam faces similar uncertainty of approval. Here the Centre and the State should use all their resources in reducing the delay in the commissioning of the first unit and in speeding the start of the work on the second unit which was approved a year ago. The problem faced by these two units in Kalpakkam is a double one. With the cut in foreign aid, the Government has to find foreign exchange resources to purchase some of the components. On the other hand the inescapable effort to produce the needed raw materials from indigenous sources to replace the scarce foreign supplies lengthens the time period. Kalpakkam is a long term energy source and within the known parameters, its execution should be expedited. (e) A coal based thermal station, transporting the raw material from Singeri will be about twice as expensive as a second mine cut and second lignite based thermal plant for Neyveli. The case for the second mine cut is inescapable, on the basis of relative cost effectiveness, optimum resource utilisation, and a need based plan frame, and should lead to an early favourable decision by the Union Government.

Boilers, Teleprinters and Paper : The unique and soundly planned Rs. 4 crores expansion programme of Bharat Heavy Electricals (Tiruchy High Pressure Boiler Plant) reported in Vol. II No. 4 is now launched. The key equipment has been ordered now from the United States collaborators and other parts of the needed equipment has been designed by its own engineers at the Tiruverumbur plant and will be produced by Hindustan Machine Tools. The software side is being met by the training programme with the foreign collaborators for training in designs and manufacture of the sophisticated and higher capacity boilers. As pointed out in the earlier issue, the Tiruchy establishment is a model for other public sector undertakings.

The tenth annual report of Hindustan Teleprinters presents a mixed picture. Its 8 percent contribution of total sales (Rs. 27.7 lakhs) for exports during 1970-71 and receipt of further orders for Rs. 7 lakhs is a positive trend moving it towards the target of 10 percent. Similarly total sales rose slightly from Rs. 341.95 lakhs in 1969-70 to Rs. 345.49 lakhs in 1970-71, mainly due to increased sales of spares. Due to higher wages, some reduction (Rs. 300) in the teleprinter sales price and continuing labour trouble, its profit after tax declined from Rs. 66.52 lakhs in 1969-70 to Rs. 53.78 lakhs in 1970-71 and its teleprinters production declined from 5010 units to 4911 units in the two years. With the expiration of the collaboration agreement, the plant now becomes a total Indian responsibility and the rationalisation of its operation, improved managerial inputs and development of conditions of industrial peace should demand priority attention.

The comments of the Legislative Assembly committee on Public Accounts on the functioning of the Poondy Paper Factory and other TIDCO operations are a useful guide for efficiency and economy in some of the State enterprises (see comments on the Department of Industry's annual reports in the last issue of the Bulletin.) The Committee details the poor planning and delays in project execution, refers specifically to the neglect in ensuring the major input—good and chemically pre-water supply—for the paper factory, and proposes remedies which need to be supplemented by a more technical analysis and solution. More generally the directive of TIDCO is to review and revise its procedures for both collection of overdues on loan repayments and the 60 percent pendency of the demand. Its most apposite directive is for a close coordination among various departments of Government in the execution of public enterprises. A case study presented earlier in this matter is the Neyveli mining programme and prospects.

Iron Ore Exports : The mechanical iron ore loading facilities in the Madras outer harbour will be ready by 1974 and the MMTC, from that year, will be exporting five million tonnes of iron ore from the Madras port instead of the present two million tonnes. (Actually last year's overall ore exports for the country declined by one million tonnes primarily due to the steel recession in our traditional exports receiving countries). The iron ore export programme faces several issues. First there has been the delay in the outer harbour construction analysed in Vol. I No. 8 and Vol. II Nos 3 and 4 of the Bulletin. Now the orders and delivery dates for crane, reclaimers, tippers and all other equipment for a loading capacity of 8,000 tonnes per hour have been established with the Mining and Allied Machinery Corporation. In addition the National Development Corporation's programme for routing the Donamali ore from Mysore through the Madras harbour and the Southern Railway's programme to double and strengthen the

Bellary-Hospet-Madras track—all ensure the attainment of the 5 million export target through the Madras port as from 1974. (This target is a part of the country's overall target to export 31 million tonnes of iron ore from 1975). The second problem faced by iron ore exports is the freight charge which weighs unfavourably on the exporter. Here the arrangements for improved railway transport and the Madras harbour expansion and modernisation will be alleviating factors. The proposed shipping code being discussed at UNCTAD III (see earlier **International** section) will provide the major long term relief with regard to burdensome freight charges. A third element is iron ore prices. Iron ore prices have been declining and fluctuating and it has been impossible to bring the producing countries together for an agreement on prices as the Petroleum producing countries have done, because of the heterogeneous character of the producing countries. Many of the developed countries are themselves important ore producers and are responsible for the investment and production of iron ore in many of the developing countries. It is against this background that in the last issue of the Bulletin the suggestion has been made that UNCTAD III should establish a link between ore and steel prices. Finally in face of the recession in the international steel industry, the expansion of ore exports calls for developing new customers, and on this government has made an encouraging start.

Textiles: The major problems faced by the Textile industry in the State have been the subject of study and action by the industrialists. The first problem is that the industry is just managing to keep its nose above the water. During 1971, 33 member mills of the Southern India Millowners Association (SIMA) showed an increase in gross sales from Rs. 43.78 crores in 1970 to Rs. 50.09 crores in 1971, fall in gross profits from Rs. 3.49 crores to Rs. 2.43 crores and an even sharper fall in net profits after allowing for depreciation and taxes from Rs. 1.22 crores to Rs. 0.63 crores. Second the causes for this precarious position of the industry in the State have been established. They include the lack of modernisation, shortages of raw materials, difficulty of diversification, escalating costs, insufficient credit, unavailability of suitable equipment, shortage of managerial talent at the higher executive levels, labour unrest, the freezing of the dues to SITRA from the sick mills thereby reducing its ability to advise and help develop the industry, and the low priority to R and D in the present situation. But the depressing situation of the industry and its causes in the State are part of the All India position of the textile industry. In the country, as of February, 1972; 670 textile mills were working, 63 were closed and 16 were just scrap. The employment situation was like the school enrolment situation. There were 9.4 lakh workers on the rolls of the textile mills in 1971 against 9.18 lakhs in 1961. But the actual working labour was 7.16 lakhs in 1971 compared to 7.93 lakhs in 1961. Production had declined from 470 crores metres in 1961 to 395 crores meters in 1971 due to the causes mentioned in connection with the State's industry plus the closure of the sick mills. Third some decisions for ameliorative action is emerging in the State. (a) SIMA has decided to establish a standing Industrial Relations Commission composed of representatives of SIMA and the trade unions, headed by an independent chairman to serve as a permanent forum for a dialogue over labour problems and for finding solutions to them. This is an important development in the State and could assure the industrial peace—the basis for productive and optimum utilisation of its limited resources and modernisation plans. (b) Credit margins are being liberalised in order to allow the industry not only to meet its crisis points but also to begin its programme of modernisation. (c) SITRA's product development programme with its

cluster of short term and results yielding features is helping in the process of restructurisation and improvement of the industry. (d) Long term solutions through coordinated and integrated research and development, the promotion of a technical information and marketing intelligence centre and a centre for textile machinery research design and development with the financial assistance of the Central and State governments have been proposed by CSIR. (e) The intensive cotton development programme with its package of practices to expand cotton production is being financed with a sum of Rs. 14.74 crores for 1971-72 to 1973-74 by the Union government in Tamil Nadu and seven other States. (f) The State also shares in the additional 2.5 million spindles sanctioned for eight States during the Fifth Plan. (g) The important recommendation of SIMA which was also made in Vol. II No. 4 issue of the Bulletin for the setting up of an efficient and effective agency to forecast and provide timely, responsible and reliable estimates of the cotton crop as one means of damping down the sharp rises and falls in cotton prices should be acted upon forthwith by the Union Government. This would also help regulate cotton imports, which being based on unreliable estimates either adds to the scarcity or the glut and disrupts the market for both the cotton producers and the textile industry.

Handlooms : The State's handloom industry was analysed in Vol. II No. 2 of the Bulletin and that analysis still holds except for one change that has taken place—the new agreement with U.K. to admit duty free 8 million sq. yards instead of 1 million sq. yards of handloom cloth and 1,20,000 sq. yards of silks. There is one recent and somewhat baffling feature of the handloom industry in the State—a continuing and rapid accumulation of stocks despite an increase in demand. Handloom stocks have shot up from Rs. 2 crores last year (which is slightly above average) to Rs. 4 crores this year. The accumulation has taken place despite an acceleration of demand. Handloom sales at Pongal nearly doubled from last year's Rs. 65 lakhs to Rs. 1.1 crores. The very successful handloom exhibition which concluded towards the end of April registered a 25 percent increase in sales compared to Rs. 50 lakhs sales at last year's exhibition. Again, against a 1970 sales for Rs. 6.33 crores, the first six months of 1971 exceeded Rs. 5 crores and might be of the order of Rs. 9-10 crores for the year. The various financial arrangements made by the State Government for Handloom industry has given it a relatively advanced position in this State, compared to that in other States. In the matter of quality, in the capacity to manufacture all types of fabrics, (unlike the restriction to a few lines in other States), and the large employment complex including highly skilled employment, the handloom industry has a somewhat special position. Production in the State has incurred from Rs. 30 crores in 1970 to Rs. 40 crores in 1971. Is the accumulating stock then due to production plans being based on a forecast of an even larger demand acceleration? But then these plans are individual and fragmented plans by individual producers and cooperatives. Is it due to the sharp rice in yarn prices? In the last six months yarn prices have gone up by an average of 5 percent per month, that is by 30 percent in six months. No industry can stand this level of price rise and while in the short run it could lead to accumulations, in the long run it will lead to contraction of the handloom industry and throw a large number of skilled workers out of employment. Is it due to the fact of the demand spurt being itself due to transient factors like the 10 percent rebate offered at the exhibition which on termination led to a contraction in demand? The industry has to cater to a demand curve which has two or three sharp peaks sparked by festivals and

exhibitions and market forecasting under such conditions becomes a highly technical task. Is the accumulation problem also due to the State's handloom products being at a disadvantage in competing against the powerloom products of Gujarat and Maharashtra? It is known that the powerloom industry, which is not allowed to enter the field of coloured sarees and dhotis which are reserved to the handloom industry, does in fact produce all types of cloth including those reserved for handlooms. Under these conditions certain lines of action to deal with the problem of stock accumulation suggest themselves. First, all efforts should be made by the Government and industry to bring down yarn price by around 25 percent and ensure their stability. Second the Government and cooperatives should undertake expert market surveys and help in forecasting demand. Third the sales promotion of handloom should be improved to reduce its present inequality vis a vis the sales promotion advantage enjoyed by the mills. Fourth the new horizons opened by the U.K. agreement increasing eight fold its duty free handloom imports should be used to reduce stock accumulation, and with further export outlets referred to in Vol. II No. 4 of the Bulletin, the market forecasts could be made more reliable and realistic. Fifth the lessons learnt in the State's training programme for handloom personnel, should be incorporated in its future programme; namely that the courses are too few to have any effect, are too widely dispensed over all production varieties, and are ineffective because of the absence of follow up of the training in terms of application. Future training programmes should concentrate on two or three lines, particularly bedsheets, towels, and carpets in which handlooms have a monopoly, the training should be on actual productions of new varieties with new tools, and the new equipment should be given to the trainees at subsidised rates. Sixth the State Government should promote powerlooms on a large scale in the State and raise with the Central Government the policy with regard to the areas in which the two will specialise. This should also include the regulation of the effect on handloom of coarse cloth supply by textile mills. Finally research such as SITRA's development of crease resistant raw silk fabric which can be produced on handlooms should be expanded and encouraged.

Private Sector: The annual reports of private undertakings show a good performance for 1971; Dunlop reports higher sales of tyres and tubes over 1970, demand in excess of installed capacity, particularly for conveyor beltings, whose manufactures for the next 42 months is fully booked, and equitable distribution at recommended retail prices. Tyre production increased by 14 percent from 4 million in 1970 to 4.6 million. Despite expansion of capacity on Government approval, the demand for truck, rear and large earth-movers tyres are far in excess of production capacity. These shortages amounting to a demand for 1 million unsatisfied tyres will continue in 1972-73. The increased production was through expanded production capacity at the Ambattur Plant. A further expansion at Ambattur for producing 2,00,000 more tyres and tubes has been requested and if approved could turn into production within one year. Only balancing equipment will be added to the existing equipment and Rs. 6 crores of foreign exchange will be saved. Two exigencies of unmet demand from the priority of trunk sector, foreign exchange savings and the employment that will be generated point to the need for this request being quickly approved by the Union Government. Apart from being the sole supplier of defence vehicles and aircraft tyres, the company has also a good and rising export performance. In 1971 it exported Rs. 3.34 crores of products to 71 countries, being nearly 50 percent of the Country's total exports and representing a rise of 10 percent over 1970. The company also reports 4 new lines of production, 1.5 million bicycle rims at Ambattur,

the Dunlop Highway 105, which is a new rayon truck tyre, the Dunlop super taxi tyre, and the rough riding PO6. Research and development expenditures have been somewhat limited as reliance has been placed on the U. K. Dunlop facilities where R and D is Rs. 15 crores per annum, now doubled by its recent merger with Pirelli or Italy. On Government instruction this lien is now being re-negotiated and the company has made a small start with Rs. 30 lakhs on R and D on cycle tyres and tubes at the Ambattur Plant. As reported in the last issue of the Bulletin, the lockout in the Ambattur Plant involves less of production in a vital sector and needs to be settled with reason and fairness between labour and management. The report on the pharmaceutical industry also records good progress in production and sales in 1971, with exports increasing from Rs. 7.17 crores in 1970 to Rs. 9 crores in 1971. The report states that to meet the health needs of the Country and the State, the pharmaceutical industry should expand at an annual growth rate of 15 percent. To achieve this growth rate, the industry makes a strong plea for stability in the industry and trade,—objectives which are a part of national policy. The industry sets forth five laudable objectives for itself in the coming years– selfreliance through increase in indigenous production of basic chemicals and further import substitution; 15 percent annual increase in finished formulations to meet the demands of increased population and increased per capita income: access to the results of international research; increase in the R and D of the State and Country; expansion of exports to meet the costs of imports including know-how. The reports of the plants making rayon yarn, staple fibre and wood pulp also record production and sales increases. Despite the universal labour troubles, raw materials shortage and rising costs, gains have been registered in all sphere including capacity utilisation. Profits margins, however, have been maintained through liberal imports of pulp. From this year, there will be larger output of rayon grade pulp from Gwalior Rayons new unit. With the increase availability of eucalyptus and other soft woods, South India Viscose will increase its pulp output. The units are expanding their capacity to meet the growing demand for cellulose films, rayon yarn and staple fibre.

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Education and Science

Educational Reform in the State : The State Planning Commission's Task Force on Education, Science and Technology examined the recommendations of the reports of its working groups referred to in the last issue of the Bulletin on School Education, Adult Education, Higher Education, Science and Technology, Internal Assessment and the Semester System, Educational Management and Administration and Educational Planning Machinery in light of the State-wise consultation on the direction of educational reform reported in tabular form in Vol. II No. 4 of the Bulletin. On School and Adult Education, there was agreement on a system of out of school education to be combined with school education to provide education to all from age 6 to 15 ; assure all children the minimum basic education, involving the attachment of a teacher to each rural school to organise out of school education of the so called "dropouts" ; a programme of adapted functional literacy to make all the 60 percent adult illiterates literate by the end of the Fifth Plan ; the treatment of classes I to V as single unit ; a ten year school with multiple exit and entry points to take account of the link of the school with the employ-

ment market at home or outside; continuing education to all through evening classes, radio and TV and correspondence courses; out of school vocational training to be available to all who are working or planning to work; functionalisation of the curriculum with individual training paths and aptitudes to be the centre place; science education to be modernised and streaming as class III and comprehensive schools to be started; a massive programme of inservice training of teachers and the establishment of a State Institute of Educational Training and Research which will have several research institutes including an institute of science development; the reform of the public examination at the end of the school (SSLC) either replacing it by a guided evaluation programme to be undertaken by each school or a reformed SSLC examination which will combine internal assessment and external evaluations as a record of school completion but not as a qualifying diploma for entering Higher education. On higher education, the structure will be a 2 year intermediate programme, followed by a 2 or 3 year graduate programme, and a 2 year post-graduate degree; the establishment of two or three new Universities or a State Council of Academic Awards which will be responsible for undergraduate education and to which all affiliated colleges in the State will be affiliated and which will put into effect the system of autonomous colleges, and the semester and internal assessment system; continuously updated curriculum and a programme of training for the college teachers; the three traditional Universities to become centres of post-graduate teaching and research with a group of professors for each faculty, who will also form the governing organ of the University; a South Asian documentation and library centre to be established along with improved and expanded facilities in library, archives and the fine arts. On science and technology a group of 14 projects were accepted including a University of Technology, a long range expansion plan for the Agricultural University, a Science Academy, a Science Research Foundation, a Hall of Science. The interesting and challenging report on educational administration and management drafted by the Administrative Staff College at the request of and financing by the Government of Tamil Nadu and the National Staff College gave rise to serious disagreements concerning some of the facts recorded in the report. The recommendations of the report were in the direction of decentralization and devolution of decision making, dividing the State into three zones in order to vest each zone with the maximum administrative powers, the establishment of a Director of Vocational Education to deal with out of school education programmes, which, it was suggested, could be combined with responsibility for Adult Education and Literacy. Members of the Task Force are to study this report on educational management and administration and communicate their comments to the authors who will then finalise the report. The Chairman will recommend the parts to be incorporated in the perspective educational plan. An educational planning cell to plan and evaluate the educational system in the State in the office of the Secretary of Education was accepted. The final stage is for the Chairman to present a draft perspective plan in education, science and technology for Tamil Nadu in light of these reports, recommendations and the results of the State wide consultation to the last meeting of the Task Force at the end of June for its discussion, comments and suggestions and in light of it present to the Commission the Perspective Plan for this sector.

Other Educational Reform Proposals: The basic approach to reform of the State Education system, namely that it has to concentrate on quality, while allowing for quantitative expansion particularly at primary level due to population growth, is being generally accepted. The Steering Committee on Education of the Union Planning Commission for

the Fifth Plan has arrived at the same conclusion, first negatively in rejecting an educational programme for the Fifth Plan being more of the same and positively by giving priority to primary education and adult literacy and the financing of innovation in Education. The Union Minister of Education at a May meeting of State education secretaries proposed a complete overhaul of the existing educational pattern on the primary and secondary school levels, with a view to securing 100 percent enrolment of children in the 6-14 group age and combining manual work with training. The meeting accepted his proposal to establish at least one model primary school costing Rs. 50,000 in each development block and one comprehensive secondary school costing Rs. 25 lakhs in each district. These schools will provide multiple entries at several points, part-time education, covering general, vocational and community education—which are the precise reform proposals of this State's Task Force on Education. These many proposals from the Minister follow from the response, that he would be proposing a reformed, need based educational system that he made to the April debate on education in the Lok Sabha. In that debate there was a general consensus in favour of the evolution of a new pattern of education, firmly rooted in the Indian tradition and capable of meeting the new challenges of the country's socio-economic development. The Union Minister had also made his basic reform proposal to the NCERT April seminar when he suggested a major reform to make our system of elementary education a multiple entry one, so that children in the age group of 6-17 at any point find access to at least part-time education and learn at least the basic skills and become functionally literate. Another reform in learning methods has been advanced by the State Minister of education, when releasing the fifth volume of children's Encyclopaedia, to the effect that every school should set apart 50 marks for library work in order to stimulate the students' desire to read general books. School working days is being discussed in the State. The Government's directive is accepted by the Elementary Teachers Federation that elementary schools should work for 220 days and high schools for 200 days. The Headmasters Union on the other hand wants 200 days for both schools. Both groups, however, agree that each system should consist of eight periods of 40 minutes each instead of the present seven periods, to provide more time for maths and sciences. Among the several reforms suggested by the Paul Committee are that a class should never exceed 40, a school a total strength of 400, that the regulation of private schools without curbing their initiative should be envisaged and that there should be formed a teachers' council to develop and administer a common code of conduct for the teaching profession. The city Headmasters, Association and the State Primary School Headmasters' Union recommend dropping the common examination held at the end of the eighth standard as it has become a farce, "encourages use of unscrupulous methods and undermines student morals". These comments also apply to the SSLC and BA and BSc. examinations today. The Director of School Education besides associating himself with the Task Force proposal to use out of school education programmes to provide education to those who have dropped out, has announced that English learning which starts at class III will now have a text book as an aid. By the end of next year, when Madras will have a TV station that will cover 10,400 sq. kms. inhabited by 4.2 million people and 1,480 villages, there will be a powerful educational tool for learning English, science and for promoting basic skills and literacy.

The All-India Seminars on Educational Reform: The Indian Social Institute, Bangalore training centre brought together in early May a dozen students who have opted

out of the existing University system and are actually engaged in various kinds of tasks to build a new social and economic system and a score of educators representing various religious, political and cultural trends to draw up a programme of education for social change. The seminar adopted a detailed programme of action on means of awakening social awareness among University staff and students, curriculum and structures for social change, student participation in the governance of Universities and colleges and out of school education for social change. The basis of these programmes is the following statement of principles adopted by the Seminar :

"A serious crisis has developed in the Indian educational system. The crisis is reflected in the failure to remove illiteracy among the majority of the Indian people, the limited number of children enrolled in schools and the low standard of education and the serious difficulties that University education has run into, beset with problems of falling standards, wastages and the mounting unemployment and unrest among students.

The system of education in India is essentially power elite oriented and divorced from the needs of the vast masses. The class ridden character of the educational system is obvious from the fact that 80 percent of University survivors come from the top 20 percent of Indian society. This in turn is a reflection of the nature of power structure of India, based as it is on a minority who own and control the major portion of productive assets in the country—a power structure which perpetuates an unjust social order with attendant mass poverty, unemployment and underemployment, rising prices, grossly inadequate housing facilities and other basic amenities for the vast majority of the people.

Without a far reaching and radical change in the present socio-economic system and political structure where decision making is concentrated in small groups, it will not be possible for the majority of the Indian people to have even the minimum standard of living, not to speak of enjoying opportunities for material and cultural advancement.

Radical social change involves :

(i) participation of the people in the formulation and implemenation of policies and programmes towards the establishment of an egalitarian society, providing opportunities for the fullest possible development of their material and cultural life;

(ii) complete elimination of the power structure in Indian society, the elimination of monopoly capitalism, feudalism, and control of foreign finance capital and know-how;

(iii) Avoidance of the domination by the authorisation elite on the system of education and the socio-political system in general;

(iv) An equitable system of production and distribution to ensure a minimum level of living for the people through such measures as the following :

(a) a new kind of mass distribution of new work serving our villages, hamlets and city slums through which wage goods—rice, wheat, cloth, kerosene, dhal, sugar, oil, etc. are made available to the poor sections.

(b) a new programme of protein enriched foods for our 20 crores of pre-school children and lactating mothers,

(c) protected water supply to the 60,000 villages who have no such supply.

(d) rural housing with basic amenities,

(e) a system which can provide employment for 14 million currently unemployed and the 1,20,000 entering our labour force every week.

Both as a consequence of the social crisis and for autonomous reasons, the moral problems in our society expressed in corruption, favouritism, casteism, communalism and dishonesty need to be faced and brought out into the open. The way forward is our dedication to and practice of the values of freedom, equality, justice and integrity.

Consistent with the above direction of social and moral change, the education pattern must fulfil the following objectives :

(a) creation of a truly democratic and scientific education,

(b) awakening of a spirit of scientific enquiry, critical reasoning and power of judgment,

(c) development of theoretical and practical knowledge and of the ability to apply such knowledge consistent with the objective need for the development of society,

(d) creation of a new value system based on human dignity and creativity,

(e) creation of a democratic structure and administration of education."

The Indian Committee of the World University organised at the Institute of Economic Growth in New Delhi a national seminar in May on the relevance of the University to nation building and national integration. The seminar attended by 50 staff and students from 21 Universities in the Country adopted a programme of work on Nation Building and National Integration and University Reform. Couched in quite different terms for the Bangalore statement, the Delhi conclusions were identical with those of Bangalore on the technical side without the Bangalore political ideology. There was general agreement that Universities as they are today cannot contribute to nation building and national integration. Equally the Universities are a part of our present stagnant unequal and unjust society. Now that the Country and every State is launching on a new social order, Universities must be reformed to play their rightful role in nation building and national integration. That reform involves new structures with student participation, curricula, addition of present examination system and a massive extension programme similar to the one chalked out by Bangalore. It involves practising in the University the values of integrity, charity, cultural uniqueness and eschewing easteisms, corruption and false regionalism. The University's function is to build and develop character. It is in the community of study, research and work for the local society that the University will become a community of objective scholars committed to the goals of natural policy.

Technical Education : The reform proposals of Technical Education in the State is ahead of the reform of other parts of the education systems. Along lines of the detailed proposals of the State Planning Commission's Task Force, the State Board of Technical Education meeting at the end of May, followed by the All India Council for Technical Education have made the following decision on Technical Education in the State : (a) The Engineering College, Guindy should add marine engineering and nautical architecture, nuclear engineering and design and automotive engineering to its courses,

(b) a sandwich course in textile technology will enable second year students of the Thiagaraja Engineering College, Madurai to spend part of their time in mills and on the basis of their experience will be extended to other colleges, (c) an industry oriented post-graduate diploma course in electro-chemical engineering will be started at the Alagappa Chettiar College of Engineering, Karaikudi, (d) a testing centre for automobile components in Madras and a testing centre for instruments at Coimbatore which are also projects of the Task Force are to be established. (e) new courses in prosthetics and orthetics in the Central Polytechnic, Madras and in aeronautics, plastic technology, rubber technology and dairy engineering in other polytechnics are to be introduced, (f) the technical high schools will offer new electives in repair and maintenance of motor cycles, scooters, pumps and motors, tractors, sprayers, and a house wiring and printing, (g) the project for the University of Technology was approved and sent to U. G C. which is commissioning a committee to examine the project in situ. (h) both the State Board and All India Council agree to the grant of freedom to certain polytechnics to devise their courses in relation to local industry—as recommended by the Damodaran Committee, (i) the All India Council recommends that 25 percent of polytechnic students should be covered by a new merit cum means scholarships programme.

Health : The State Planning Commission's Task Force on Health, Family Planning, Nutrition and Sanitation examined at the end of May the recommendations of its seven working groups that were referred to in the last issue of the Bulletin. It approved the following racommendations : the integration of the administration of Health, Family Planning and Nutrition under a single Minister, Secretary and Director who will have under them three joint directors for the three areas at the headquarters level, and the complete unification of the three services at the district, taluk, block and village levels; the integration of modern and indigenous medicine services by having 450-600 beds with a 20 bed siddha wing and 10 homeopathic beds in every district headquarters hospital, a 30 bed hospital in the centre polyclinic at the taluk level, polyclinics at the block level and mini health centres at the panchayat level with siddha dispensaries attached to them; auxiliary nurse midwives and pharmacists will be recruited from the SSLC graduates in the villages and in the case of the later will be posted in their villages to operate a dispensary under the supervision of the mini health centre; a health cess of 0.5 percent of a person's income to be levied to operate a mass health insurance plan; some of the voluntary agencies will be given charge of some of the mini health centres along with the resources necessary; the family planning target of reducing births to 25 per thousand by the end of the Fifth Plan and the subsidiary targets for conventional contraceptives and sterilsations are to be accompanied by a massive programme of education of the people in population problems; the nutrition plan which is to be administered by integrated service will operate through 12,500 kuzhanthaigal kappagams, 3,500 creches and MCW centres in order to reach the target group of 140 lakh pre-school children and lactating and pregnant mothers; medical educational plans include a post-graduate research centre in Madras, the opening of a college in Homeopathic medicine and a second college in siddha in the State, the upgrading and establishment of a medical college in every district headquarters with a revised curriculum in medical, dental and nursing education, and a post-graduate orientation course in indigenous and homeopathic medicine to graduates in modern medicine, a water supply programme to provide water to the 3,600 villages who have no water and the 6,400 villages with inadequate water, sanitation programme to

extend underground drainage in cities and municipalities, the construction of septic tank systems in the villages and a programme to control industrial effluents and air pollution. The Chairman of the Task Force is now establishing the final Perspective Plan in this area for discussion and comment by the Task Force at the end of June.

On April 17, which was WHO's Cardiology Day with its theme "your heart is your health", a 120 bed Institute of Cardiology was opened in the General Hospital, Madras. The Rs. 75 lakhs eight storey Institute, equipped with the latest electronic devices for intensive care of heart patients, is now able to attend to preventive, curative, diagnostic and rehabilitative aspects of heart ailments from childhood to old age. On the occasion of the opening of the Institute, a three day seminar on Cardiology and Thoracic Surgery was held and was attended by WHO staff from Delhi and Geneva. Its conclusions constitute a valuable addition to the expertise of the Institute.

A team of doctors has concluded the examination of 5,200 children attending classes I to VI in 36 corporation and private schools around the Stanley Hospital, Madras and concludes that (a) most school authorities are unaware of the immunisation programme against the child diseases of small pox, diptheria, tetanus, whooping cough, poliomyelitis etc., calling for a publicity programme to make parents, school authorities and students aware of this vital programme; (b) most children examined were undernourished and suffered from vitamin deficiency, leading to dental caries, TB infection and brain damage. The midday meal programme should be supplanted by vitamin biscuits, milk, codliver oil and fruit; (c) the general cleanliness of the students and the sanitary conditions in the schools are poor and social workers should help improve this area. A medical inspection programme should gradually be introduced in all schools. At present medical check up of school children exists in 18 primary health centres. The State Planning Commission will take into consideration these recommendations in establishing the State's Health Perspective Plan.

Science: An important proposal on the linking of the sciences was made by the Director-General of ICAR at the convocation of the Orissa University of Agriculture Technology. There is now an urgent link for the agricultural sciences to forge a new link with social sciences. The new packet of agricultural technology and pest control and scientific land and water management which are at the base of the agricultural breakthrough depend for their extension, continuance and permanence on community co-operation, self effort and willingness to innovate. The absence of a match between the social requirements and preconditions of the new agricultural technology and our existing social and managerial organization is leading us to technical bottlenecks and social tensions which are what we call the second generation problems in the use of the new technology. There is a need now for a joint interdisciplinary, social sciences and natural and agricultural sciences approach to agriculture, a need which will be intensified as the land ceiling legislation referred to earlier begins to be implemented. This is the task facing our scientific community. One way of developing such an admixture is for all students—those in the agricultural sciences and those in the social sciences—spending atleast two months every year as part of their normal curriculum and academic programme of work in the village. This would also help in alleviating the problem of unemployment which is aggravated by our thinking of employment as paid, preferably Government, employment.

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Second Workshop on Economics Research Methodology :

The Second Workshop on Economics Research Methodology, Waltair under the direction of Dr. B. Sarveswara Rao, Professor and Head of the Department of Economics, Andhra University, began on Monday, May 8 in the Andhra University and, receiving the sad news of the death of Mr. D. Sanjeeviah, President of the Congress and a beloved leader of Andhra Pradesh and India, adjourned for the day after adopting the following resolution—"The participants of the Second Workshop in Economics Research Methodology meeting in Andhra University, Vishakapattinam place on record their deep sense of sorrow at the sad and sudden demise of Sri Damodaran Sanjeeviah, President, All India Congress Party and the former Chief Minister of Andhra Pradesh. We convey our sincere condolences to the bereaved family." It also adopted a condolence resolution on the death of the outstanding economist of Madras, India and the United Nations and a respected leader of all young economists, Dr. P. S. Lokanathan—"The participants of the Second Workshop on Economics Research Methodology meeting in Andhra University, Vishakapattinam place on record their deep sense of sorrow at the sad demise of Prof. P. S. Lokanathan, former Professor and Head of the Department of Economics, Madras University, Executive Secretary, ECAFE and former Director-General of NCAER and a well known and eminent economist. We convey our condolences to the bereaved family." The workshop was inaugurated on Tuesday, May 9th by the Director Madras Institute of Development Studies under the Chairmanship of Mr. Bullaya, Vice-Chancellor, Andhra University. The workshop's 31 participants and their thesis specialisation is as follows :

Name	*University*	*Subject of Research*
Mr. V. Gandhi Babu	Andhra	Savings and Capital Accumulation in India
Mr. B. Bhaskara Rao	,,	Agricultural Production Function
Miss B. Kusumakumari	,,	Incidence of the Budgets
Mr. P. Adinarayana	,,	Role of Anakapalle regulated Market and Co-operative Marketing Society in Marketing of Gur
Mr. P. Jagannadhacharlu	,,	Long Term Finance for Agriculture in Land Mortgage Banks
Mr. M. Vivekananda	,,	A study of State Finances of Andhra Pradesh (1956-57 to 1971-72)
Mr. C. Harichandran	Annamalai	Panchayat Finances in Tamil Nadu
Mr. A. K. Ramalingam	,,	A Study of Fluctuations in land values in Chidambaram Taluk
Mr. S. G. Gambir	Karnatak	Economics of Silk Industry in Mysore State

Name	*University*	*Subject of Research*
Mr. V. S. Angadi	,,	Investment and Location in Sugar Industry in Mysore State
Mr. S. G. Sholapur Math	,,	Agricultural Finance through Co-operative Societies in Mysore State.
Mr. V. Balakrishnan Nair	Calicut	Problems and Prospects of Timber Industry in Calicut
Mr. M. Padmanabha	Mysore	Finance of Mysore State
Mrs. P. Sumangala	Madurai	Cost-Benefit Analysis of Family Planning
Prof. K. Rajeswaran	,,	Sivakasi Match Industry
Mr. V. V. Singh	,,	A Quantitative Economic Analysis of Allocation of Resources in Tamil Nadu
Miss K. Geervani	Sri Venkateswara	Burden of Public Debt in India
Mr. K. Lakshmaiah	,,	Regional Economics
Mr. B. C. Moses	Madras	Entrepreneurship in Tamil Nadu
Mr. B. S. Nagarajan	,,	An Analysis of the norms of an economic holding in Madurai District, Tamil Nadu
Mr. C. Murukadas	,,	Population and Growth Perspective in Kanyakumari District
Mr. K. Rajamanickam	,,	Model Building in National Income and Social Accounting
Mr. C. B. Dayalan	,,	State Bank of India and Development
Mr. G. Elumalai	,,	Role of industrial and administration in Economic Growth
Mr. B. A. Prakash	Kerala	Evaluation of RTC in Kerala
Kum. Usha Chanbey	Ravishankar	The Problem of underemployment in the agricultural sector of Raipur district in Madhya Pradesh
Mr. Y. G. Jayaram	Osmania	Industrial Policy Reform
Mr. A. L. N. Murty	,,	Deficit Financing and Inflation in Andhra Pradesh
Mr. G. Gopal Reddy	,,	Agricultural labour costs in State Planning
Mr. K. Pratap Reddy	,,	Development and Employment
Mr. Narasimha Reddy	,,	Taxation of Farm Income

The daily schedule of the six week workshop from Monday through Saturday consists of :

8-00 a.m. — 9-30 a.m.	:	A course in Economic Statistics and Mathematical Economics prepared by the Statistics Staff of the Department of Economics, Andhra University
9-30 a.m. — 11-00 a.m.	:	Discussion of one of the 18 methodology themes as set forth in Volumes I, II and III of the Basic Papers.
11-00 a.m. — 1-00 p.m.	:	Work in Seven Groups : (a) Farm Size, Efficiency and equity criteria (b) Agricultural Credit and Marketing (c) Government Finance (d) Regional Economic Problems (e) Industry and Transport (f) Population, Technology and Employment (g) Development Strategy and Finance
3-00 p.m. onwards	:	Library work and individual discussion among participants or with Resource Personnel.

During the first week May 8-14, Dr. A. Ramaswami, Head of the Department of Economics. Annamalai University and Dr. Malcolm S. Adiseshiah, Director of Madras Institute of Development Studies and during the second week May 15-21 Dr. C.T. Kurien, Professor of Economics, Madras Christian College acted as resource personnel of the workshop. Several staff members of the Department of Economics and Department of Applied Economics of the Andhra University were also available as resource staff.

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Training Programme for District Planning and Statistical Officers :

The training programme, reported in the last issue of the Bulletin, held in the conference hall of the Directorate of Archives, Madras, from 17th to 29th April was attended by the following 31 officers.

Thiru N. Pranatharthiharan,	District Planning Officer	Chingleput
,, C. Devarajan	,,	North Arcot
,, K. Sundaramoorthy	,,	South Arcot
,, M. N. Balasubramaniam	,,	Salem
,, K. S. Krishnamoorthy	,,	Dharmapuri
,, K. Sivaramakrishnan	,,	Coimbatore
,, M. Muthuraj	,,	Nilgiris
,, G. Sethuraman	,,	Thanjavur
,, P. Doraiswami Pillai	,,	Tiruchirapalli
,, A. Subramaniam	,,	Madurai
,, C. W. Appadurai	,,	Ramanathapuram
,, K. Palaniyandi	,,	Tirunelveli
,, N. S. Guruswami	,,	Kanyakumari

Thiru T. P. Rudrappan	Statistical Officer	Chingleput
,, S. Rajiah	,,	South Arcot
,, S. Rajendran	,,	North Arcot
,, R. D. Victor	,,	Salem
,, T. P. Rathinavelu	,,	Coimbatore
,, V. Chokalingam	,,	Tiruchirapalli
,, M. Balakrishnan	,,	Thanjavur
,, V. Thangadurai	,,	Madurai
,, S. Veluswami	,,	Ramanathapuram
,, C. Thankappan	,,	Tirunelveli
,, S. Pandi	,,	Kanyakumari
,, Rajaveeri Chetty	,,	Dharmapuri
,, B. Hiriyan	,,	The Nilgiris
Thiru R. A. Sirvadham	Planning Officer	Madras City
,, V. Soundararajan	,,	State Planning Commission
,, S. Chidambaram	,,	,,
,, V. Palanithurai	,,	,,
,, R. Bakthavathsalam	,,	,,

The training course made the following 36 decisions for themselves and 10 recommendations to the State Planning Commission as means of aiding them in their task of drafting the 13 d.strict Plans.

A District Planning Cell

I. Starting Work

(1) The District Planning Officers and Statistical Officers will copy the project sheets available at the course Library relating to their districts.

(2) The District Planning Officers will present to the Collector a programme of work for the formulation of District Plans, along lines of what has been decided at this course. In this programme (a) activities should be broken down as much as possible, (b) for each a date must be given (c) continuous review of the time schedule once a fortnight, should be undertaken (d) for every major activity deadline, a 4 or 5 day margin should be provided (e) stages III, IV, V and VI would require at least the equivalent of 2 months.

(3) The District Planning Officer will report on the conclusions of the training programme to the District Collector and request him to call around 9th May, a meeting of all Officers concerned with District Planning at which the methods of formulating the Plan will be explained.

(4) The District Planning Officers will constitute a Library to include Reports on their districts such as Industrial Potentiality reports issued by the Small Industries Service Institute, lead bank surveys, the Techno-Economic surveys, studies by educational institutions such as Gandhigram and Ramakrishna Vidyalaya, Agricultural Census, Soil Census, Ford Foundation Survey of Growth Centres, the Neyveli complex studies, the S.F.D.A., M.F.A.L. Surveys, District Gazetters as well as important reports issued by the

State Government like the Economic Appraisal document. The State Planning Commission Library will assist the District Planning Officers on request in constituting this Library.

(5) Statistical Information should be collected block wise in the districts, spelling out the particulars for the Municipalities, Townships and Corporations, separately.

(6) The Officers noted below will be charged with the responsibility of collecting the information in regard to the compartments noted against each (See the Guidelines to District Collectors).

District Planning Officers: 1.1 (ii) to (vi): 1.6, 2.2, 4.2, 4.3, 6.1, (iii), 6.4, 7.1, (iv) (v) (vii) 8.2, 8.4.,

Statistical Officers: 1.1 (i), (vii) to (xi), 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 3.1, 3.2, 3.3, 3 4, 3.5, 3.6, 4.1, 5, 5.2, 6.1, (i) (ii), 6.2, 6.3, 7.1, (ii) (iii) 7.2, 8.1, 8.3, 8.5, 8.6, 9.1, 9.2, 11, 13, 14.

II. Stages I and II

(7) The District Planning Officers will divide the development Districts into homogeneous regions based on the 4 tenets spelt under Stage I (Attachment to the Training Programme brochure reproduced in the last issue of the Bulletin) bearing in mind the desirability of keeping within administrative boundaries and of ensuring contiguity, both of these latter considerations applying as far as possible.

(8) The criteria for developing sub-regions would be applied to Block Statistics and will involve using a leading criteria such as agriculture, or natural resources or rainfall or living conditions and simultaneously the related integrated criteria.

(9) The analysis of the cultural activities and factors should include Libraries, Museums and the state of fine arts in the sub-region and particularly the potential for leadership as a means of promoting sub-regional development.

(10) On the basis of the analysis of the Fifteen Socio-economic factors listed in state II (a) of the document, Chapter I of the District Plan will be drafted as the analysis of the socio-economic situation of the sub-regions on the development districts.

(11) District Planning Officers requiring technical information for their plans not available in the District will address the State Planning Commission for obtaining such information.

(12) District Planning Officers will collect the information for their Districts on the projects in operation during the IV Plan listed in II (b) (page 8 of the Training Programme Brochure) under 16 headings including Industry. This will be collected by 30th June.

(13) The District Collector is requested to obtain information on the private sector in the District.

(14) Chapter II of the draft plan will contain the analysis of the projects in II (b) in the basis of 5 criteria mentioned (page 8 of the Training Programme Brochure) plus a limited use of cost benefit analysis for a few selected projects and the application of cost-effectiveness studies for all projects. For the cost benefit analysis the State Planning Commission Secretariat can help each District to make such an analysis for no more than 2 projects.

For carrying out the cost benefit analysis the following particulars for the project may be required. The details will differ with the nature of the project.

Costs :

1. Cost of investigation, survey etc. for the project, if any.
2. Total investment.
3. Cost of construction.
4. Cost of materials, (a. Imported, b. Domestic).
5. Labour cost per year.
6. Recurring expenditure.
7. Interest and loan repayments.
8. Other costs.
9. Time required for completion.

Benefits :

1. Expected or actual increase in employment.
2. Gross Income generated and/or value of gross product output from the project in a fiscal year.
3. Value of exports promoted.
4. Value of increase in internal trade.
5. Ancillary activities established, if any (total investment for each activity).
6. Value of impact on transport development.
7. Social benefits (non-quantified).
8. Other benefits.

As the particulars required vary from project to project; if the District Planning Officers indicate the project(s) to be assessed, the Planning Commission Secretariat will send the District Planning Officer concerned the appropriate pro-forma to be filled in by him.

(15) Chapter II should conclude with broad evaluations of the sub-regions resources and projects along some such lines as set-forth in page 9 (of Training Programme Brochure).

(16) Chapter I & and II should be completed by July 31st 1972.

III Stage III :

(17) In preparing stage III, the District Planning Officers will be guided by the following computation of Indicators :

(a) Establish per capita indicators for any or for all of the following :

- (i) Distribution of labour by Industry,
- (ii) Wages,
- (iii) Food, Clothing and Kerosene,
- (iv) Housing,
- (v) Drinking Water,
- (vi) Crops—Food and Non-food,
- (vii) Forestry and Fisheries,
- (viii) Manufactures,

(ix) Education,
(x) Family Planning,
(xi) Health,
(xii) Cultural Activities,
(xiii) Electricity.

(b) Compute the value of product added in agriculture, Industry and Mining the basis of a format attached (to be provided by the Secretary of the on Task Force on Financial Resources).

(18) The sub-regions may be reviewed after the establishment of the per capita indicators.

(19) The District Planning Officers will calculate the Financial Resources likely to be made available for the plan period under the following heading :

(a) Revenue raised by local bodies—assume an annual 5% increase;
(b) Private sector to be divided into that part which is under the control of the local authorities and that which are not ;
(c) Voluntary contributions ;
(d) The State contributions where an annual increase of around 10% may be assumed,
(e) Loans from banks and co-operative societies,

(20) On the basis Stage III (c) and (d) (e) (in page 9 of Training Programme Brochure) the Perspective Plan Programme should be established.

(21) The Social Services include, Education, Health, Family Planning, Nutrition, Drinking Water, Housing, Cultural Centres and promotion of voluntary organisations.

(22) In the Perspective Plan, absolute priority should be given to backward regions and poverty sectors.

(23) In establishing the programme in Stage III, the Collector should take the major responsibility.

IV Stage IV :

(24) In stage IV, District Planning Cell will formulate a Shelf of Projects based on the Programme in State III, using the format on Page 10 (of the Training Programme Brochure).

(25) In formulating the projects in Stage IV the District Planning Cell will rely on the technical Officers in the Districts.

(26) The District Planning Cells will have for guideline the targets for each sector indicated in the Draft Perspective Plan Frame which will be available in May, 1972.

(27) Where appropriate, District Plans might propose (a) A dry farming Credit Organisation, (b) A Small Industries Service Cell.

(28) Village Industries and Handicrafts will be part of District Plans for which the relevant District Officer should be consulted. In proposing any project here, the marketing outlets should be ensured and if possible indicated.

(29) In water supply, the highest priority should be given for projects in villages which have no facilities or inadequate facilities, taking into account the availability and the potability of water.

(30) On Rural Sanitation projects on septic tank latrines should be given priority.

(31) Rural Housing Projects, providing house sites, using local materials and based on a District Revolving Fund which should be set up, if possible, is a priority.

V. Stages V & VI

(32) In Chapter VI, these summaries will be for the 2 annual plans 72-73, 73-74 and for the Fifth and Sixth Plans showing both outlay and income. The outlays or expenditure will be distributed as Recurring or Non-Recurring. The reporting and evaluation procedure required for each project in Stage IV must include (a) periodicity of reporting, (b) the main elements of the report, viz., the rate of execution of each element of the project and the problems and difficulties encountered. The evaluation of the project will come at a later stage for which a seminar might be organised.

(33) The Project or Programme for which the responsibility lies at the State level are those indicated in page 3 of the Guidelines to District Planning. In that section, Ayacut, Development, Soil Conservation, Handlooms, Water and drainage for Town Panchayats will also be indicated in the District Plans.

(34) The District Plan will contain 6 Chapters :

Chapter I — Sub-Regions (Pages 2)

Chapter II — Analysis of socio-economic situation in Sub-Regions (Pages 5-2500 words)

Chapter III — Evaluation of current projects and conclusions indicated by Chapters II and III. (pages 4-2000 words)

Chapter IV — The programme for the Perspective Plan period (pages 2-1000 words)

Chapter V — Projects for period 72-73 to 83-84 (pages 20-10000 words)

Chapter VI — Summary (pages 3-1500 words)

(35) The deadline for submission of District Plans to the State Planning Commission is September 30th, 1972.

(36) The District Planning Cells will get in touch with the Regional Planning Officers (a) to obtain information on their studies and (b) to give them information on the District Planning procedure and materials.

B. State Planning Commission :

(1) The State Planning Commission Secretariat will send the District Planning Officers the project lists of all the State Projects.

(2) The State Planning Commission is requested to obtain an instruction to the District Officers to work with the District Collector in the formulation of the technical projects in Stage IV.

(3) The State Planning Commission is requested to obtain copies of the Guidelines to District Planning from the Union Planning Commission to make it available for the library of the District Planning Officers.

(4) The State Planning Commission should arrange with the Reserve Bank of India and the Life Insurance Corporation for the issue of instructions to Commercial Banks and Life Insurance Corporation representatives to provide information on their activities and projects to the District Planning Cells.

(5) It was decided to provide for a period of 2 months a Statistical Assistant, to the Statistical Officer for each District Planning Cell for the sole purpose of collection of statistics at the block level.

(6) The State Planning Commission is requested to help in reconciling the differences in statistics on the same subject reported by different departments and help in evolving common definitions where possible and appropriate at the development district level.

(7) The State Planning Commission Secretariat will make available information to the District Planning Officers on the District Product or District Income as is available.

(8) The State Planning Commission will examine all District Plans, consulting the concerned departments as appropriate, with a view to approval of the plans and incorporation in the Perspective Plan.

(9) The Planning Commission is requested to arrange for District Planning Officers and District Statistical Officers to travel when necessary to other Districts or to the Planning Commission Headquarters to obtain information and to get help in co-ordinating their programmes.

(10) The State Planning Commission will have a Unit to deal with the District Plans and District Planning Officers.

The 31 members filled a self evaluation questionnairs of the training programme in which, leaving aside their generally satisfied and commendatory comments, their suggestions for future programmes included: (a) a residential programme (requested by all) to spend more time with each other and reduce costs of travel from residence to the course, (b) a model district Plan (suggested by some) the centre price of the training programme, (c) a more practical approach in the programme, meeting, if possible, in a rural area to discuss the actual plan of that area. (d) lectures to be circulated in writing, more charts to be used, with more time for questions and answers, (e) the programme to provide for breaking up into 4 or 5 groups and group discussion among participants, (f) tea and coffee breaks to relieve mental fatigue and to promote individual discussion, (g) the status of the District Planning Cell and its member to be raised in line with their heavy and new responsibility, (h) subjects which were omitted in this course to be included in future courses—Harijan Welfare, Mass Education, Demography, Banking and Co-operatives, Transport and Marketing, Inequality of Incomes, Women's Welfare, Sports, PWD and Highway Linear Programming and Forecasting, (i) some subjects like PERT programming and Systems Analysis in District Planning too technical and difficult to understand in one morning and to be omitted.

The course followed the modern pedagogic principles that are to be incorporated in the State's reformed educational system. The learning techniques and teaching technology was dialogue-based and followed the individuals learning path, the curriculum was continuously reviewed and modified in light of the review, there were no examination and diplomas at the end, the examination and graduation being the 13 district plans and their quality—which will be drafted by September 30. The curriculum outline invented for the first time for a training programme of this kind was a sufficient basis and its six suggested stages for the drafting of a district plan were adopted with various extensions, classifications, modifications and conclusions as the decisions of the participants. The Chief Minister, the Chairman of the State Planning Commission's call to make district Plans need based made the participants realise that today it is not resources that limit decisions but decisions that determine resources. Above all the district officers are now fired with enthusiasm invoked by the vision of the cause of the poverty sector which they are to serve and they feel equipped to undertake this innovative task of planning from the village and district level—a task which has not been undertaken so far not only in this State but in the Country. It carries grave risks and faces many obstacles—known and unknown—but the training programme generated the will and faith that is decisive in this war against poverty—which is what District Planning is.

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Seminar on Techniques of Perspective Planning :

Objectives : A seminar on the techniques of Perspective Planning, organised by the Madras Institute of Development Studies, and the Institute for Techno-Economic Studies, Madras in co-operation with the State Planning Commission, will be held in Rajaji Hall, Madras-2, on September 15th and 16th, 1972. The State Planning Commission is engaged in developing a Perspective Plan for Tamil Nadu covering the 12 year period, 1972-84, which subsumes the Fifth and Sixth Plan periods. As part of this formulation, the Commission has issued a Draft Perspective Plan-frame in May in order to promote discussion among the people on the strategy of the Plan and on the options that are being offered. The seminar is a part of this planning process. It is thus being organised to bring together Central, State and Local Government Officials, leaders of business, labour and industry and academic and research personnel. And it will further discussion on :

(a) the inputs of the State Perspective Plan, viz., the Plan-frame, District Plan, Regional Planning, Sectoral Programmes and Area and Industrial Complex Studies, and

(b) the objectives, strategy and targets of the Plan.

The seminar will thus provide an opportunity for continuing public discussion and diffusing information on the State Perspective Plan. It will serve to elicit comments, suggestions and advice on the major issues of Planning in Tamil Nadu.

Programme :

President	:	Thiru P. Sabanayagam, I.A.S., Chief Secretary to the Government of Tamil Nadu
Vice-President	:	Thiru M. G. Raja Ram, I.A.S., Deputy-Chairman, State Planning Commission

September 15, 1972

10-00 a.m. to 1-00 p.m.	:	*Perspective Planning in Tamil Nadu*—Inauguration by Chief Minister Dr. M. Karunanidhi *Draft Perspective Plan-frame*— Dr. B. Natarajan
2-30 p.m. to 5-00 p.m.	:	*Sectoral Programming* — Thiru N. Mahalingam—2-30 p.m. — Dr. B. Bright Singh—3-00 p.m. — Dr. A. Vaidyanathan—3-30 p.m. *District Planning* — Thiru T. V. Antony—4-00 p.m. — Thiru J. Sivakumar—4-30 p.m.

September 16, 1972

10-00 a.m. to 1-00 p.m.	:	*Industrial Studies Complex* — Dr. V. Shanmugasundaram—10-00 a.m. *Area Studies* — Thiru Eric P. W. da Costa—10-30 a.m. *Regional Planning* — Thiru E. C. P. Prabhakar—11-00 a.m. *Resources and Constraints* — Thiru S. Venkataraman—12-00 noon — Thiru S. L. N. Simha—12-30 p.m.
2-30 p.m. to 5-00 p.m.	:	*Participation of Universities in Perspective Planning* — Dr. A. Ramaswami, Annamalai University—2-30 p.m. *Participation of Local Bodies in Perspective Planning* — Thiru M. A. M. Ramaswami, Sheriff of Madras—2-45 p.m. — Thiru V. Krishnamurthy, President, Union Panchayat Council—3-00 p.m. *Participation of Private Sector in Perspective Planning* — Thiru T. S. Krishnan, Director, T.V.S.—3-30 p.m. *Valedictory Address: Perspective Planning and Five Year Planning*—Hon'ble Thiru K. Subramaniam, Union Minister of Planning, Science and Technology—4-00 p.m.

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May Madras Development Seminar: The May Seminar paper—Inhibiting Factors in Indian Society—by Dr. N. Subramanian, Professor of Ancient History, Madurai University together with a summary of the discussion of the paper on Thursday, 25th May in the seminar room of the Institute under the chairmanship of Mr. T.S. Venkataswamy, Professor of Economics, Presidency College, Madras appears as the first article in this issue.

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Second Article: Another article on 'Housing and National Development' appears as the second article.

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Special Issue Article: Second Census of Social Science Research in Tamil Nadu

The results of the Second Census of Social Science Research in the State—still incomplete and multiform—appears as the final article in this special issue of the Bulletin.

INHIBITING FACTORS IN INDIAN SOCIETY

By

DR. N. SUBRAMANIAN
Prof. of Ancient History
Madurai University, Madurai-2.

This paper hopes primarily to determine, list and discuss the factors in Indian Society which inhibit achievement of development targets.

Development in the context of economic planning has attained a restricted meaning namely 'economic development' and so does not include 'progress' of a non-economic nature considered to be legitimate, desirable and even necessary by certain ancient cultures like our own. It may be stated that social (educational, health, environmental etc.) development is not beyond the purview of economic development since in such a process the economy moves towards overall development, and not merely towards acquisition of a monetary and hence material affluence. But here one must bear in mind that cultural values which act as obstacles to the growth of affluence will have to be ignored or treated as irrelevant when one is concerned with problems of development. This is a fundamental issue.

Hence the inability of the planners for affluence to see eye to eye with the preachers of contentment. Progress which can be linear or spiral, and has to be in a preferred direction, is deemed better if it is faster, implying that stagnation is non-progress and reversal anti-progress. Since we have, it seems, been converted to the view that aspiration to more is an index of the civilization of progress, we have to leave behind the older value of contentment as outmoded and useless. But this older value system, which in recent times Gandhi represented, can be not only outmoded but destructive and bothersome if allowed to co-exist with modern economic values, and the continuous increase in the production of more and better things and the discovery of the means of equitable distribution of things so produced. It is clear that developing economies like India have a cultural aspect to their current public activities; that is, the assessment of the factors which go into the planning and achievement of secular and social targets can and often does fall into the error of reckoning without the human element; the targets concentrate on statistical data which are tacitly assumed to be valid for all conditions (assuming they are valid for any condition). It is usually contended that the human element is also weighed and thrown into the calculation and that appropriate allowance is made for its variation. But for practical purposes certain demonstrable factors particularly relating to group character are treated as constant, (in space and time) thereby in danger at permitting the final conclusion.

This consideration becomes important and basic because a planner for development has to satisfy himself if a culture constructed and reared on a philosophy of contentment can at all co-exist with a new anti-contentment philosophy. It soon ceases to be a mere problem in co-existence, it becomes a hazard to development. Indian culture especially its pessimistic aspects which pervade Indian social life, like the doctrine of fatalism

inhibit faith in the secular autonomy of man. This faith is not accepted by the cultural bridge-builders who contemplate the possibilities of the servile and feudal past co-existing and cooperating with the democratic and industrial present, creating a synthesis between ancient agricultural tribalism and modern industrial urbanism. Incidentally it is better to keep in mind that ancient tribalism differs from modern urbanism, not on the basis of its area of occurrence but the attitude of mind and the culture complex which defines it. An anachronistic tribal set in the modern urban environment does not become modern by mere virtue of its setting. The objectors to this position disagree on two counts. In the first place they say that the process of economic development along secular lines is a neutral function, and no known culture has objected to material affluence whatever else it might profess or practice. They also point out that in the long history of this country public action towards the achievement of material affluence was not unknown. This contention overlooks the distinction between an affluence-oriented social philosophy and an attitude of mind which just suffers material well-being and considers it an unavoidable evil. Whether the former or the latter was India's social philosophy cannot be determined except with reference to the consequences of such an attitude. All that has happened in the course of our history shows an endemic indifference to secular standards governing the affairs of the country.

There has been a doubt whether the traditional social structure including the class and caste stratification has been inhibiting industrial modernism. It is suggested that the social stratification is inherently unrelated to industrial production and that production is determined by individual effort and not the group to which the individual belongs. This is in a superficial sense true but when it starts operating as a social phenomenon, the social attitudes of people which have been built into them by the functioning of the social structure over a very long period of time, will tell; that is, the national psychology of the people is in the long run more effective for good or for evil than the visible physical opportunities which are understood on surface. The theory regarding national character is nowadays discredited. But the national character, is a compound of many indeterminates and what is seen on the surface is like tip of an iceberg. And when it becomes a positive force it simply cannot be disregarded.

All that has been said above must not be construed as adversely referring in any particular national character, but merely as a significant factor in the determination of the quantum of popular cooperation with the planners or the plan executing machinery. But it is true, whether we like it or not, that the traditional and cultural values of a people do help or hinder secular progress. If it seems that the core of the cultural values of a people are such as to inhibit the 'development process', then a choice has to be made between the retention and growth of such values or the acceptance of development as a concomitant of civilization.

It is possible to give three examples of how social attitudes and traditional value systems can influence social behaviour patterns and how this can lead to an acceleration or retardation of economic achievements. First, traditional attitudes to birth control by clinical interference or the use of contraceptives obstruct family planning programmes. Statistical data in this regard are notoriously defective and the menacing growth of population which goes ahead of production wipes out any achievement in the fields of industrial or agricultural output. Demographic estimates which, under the circumstances

prevailing in India (the last census figures relating to 1971 are if anything extremely rough 'guestimates' based on sample surveys and not on a fullfledged scientific enumeration) are highly misleading and throw the entire planning process out of gear.

Another and a very important area in which social attitudes and scales of value interfere with environmental improvement is sanitation and hygiene. Notions of purity are related to ideas of pollution basically. Planning for a clean environment is alien to the local tradition which however insists on ritual washing; hence modern methods of environmental cleanliness are not heartily accepted by a vast majority of the people who will not contribute to the maintenance of initiated programmes of environmental hygiene. The importance of environmental hygiene lies in its being an integral part of prevention of communicable diseases; under hygienic conditions the incidence of disease to be tackled at a curative level could be reduced. This would cut the total quantum of the medical bill for the country as a whole. The health of the population is not unrelated to its contribution to creation of national wealth.

Thirdly, traditional food habits like strict vegetarianism which is quasi-religious tend to affect the quality of live-stock. This also can put a heavy pressure on the cultivation of vegetable products, but what really matters in the long run to the country will be that vegetarianism without affecting vitality longevity or intellectual alertness, reduces the capacity for sustained factory or field-work or even military service.

These are some of the inherited inhibitions; and the development process in India today began with a set of liabilities which have been intractable. A vast illiterate population which continually grows was a heritage. This population is accustomed to traditional avocations which could be unskilled agricultural labour for a part of the year and total idleness during the rest of the year. No doubt job patterns and opportunities are now changing, thanks to growing industrialisation. But in view of the preponderance of villages over towns and a very large number of slum and pavement dwellers in cities, the total number of unemployables is still formidable. By unemployable, I mean, not merely the naturally and the physically incapacitated but also the vast army of illiterate unskilled population. In a growing industrial society the unemployed must be analysed into the educated unemployed, the skilled unemployed, the unskilled unemployed, employable beggars etc. This is not the worst aspect of the situation. The problems generated by the employed are more serious than those created by mass unemployment. We have misfits, square pegs in round holes who create an illusion of employment, are a burden on the tax-payer, prevent the competent from functioning and clog the employment channel. This is partly due to the anxiety of the unemployed to secure any job irrespective of aptitude the desire of all people to secure soft jobs, and the absence of a mechanism by which persons can be fitted to jobs. This situation is not altered seriously by the functioning of the public service commissions. A host of autonomous bodies choose their own employees; private employers find it difficult to resist pressures from exalted persons who can be depended upon to choose wrong persons for responsible jobs. This state of affairs leads to a public situation wherein there are two types of jobs. Jobs which do not get done for want of employers and jobs which get badly done because of the wrong employees. Peripherally we may have a few jobs done well by pure accident. That there is no public mechanism by which this sad state of affairs can be altered is a serious inhibition to development.

Motivation is another important factor in the successful performance of functions. This argument could be stretched to include the debate on the desirability or otherwise of nationalisation of private enterprise: Involvement, dedication, devotion are non-economic motivations not easily generated by a mere increase in the pay scale. Hence any discussion about this problem of galloping unemployment will have to consider not only the quantitative problem of the number of unemployed but also the qualitative one of misemployment. In so far as we have till now no means of rectifying this situation. we have a formidable inhibition to development.

The irritating policy of discrimination against talent not only inhibits to that extent development at home but also encourages flight of talent from here to elsewhere. It is usually contended that fleeing talent is unpatriotic while the fact is that creators of the conditions which oblige the talent to flee are really responsible for the hegira of local talent. The return of the native is a hard problem, because his flight is not always to seek better emoluments, but often to secure better job satisfaction and recognition or at least avoid positive discouragement. The recovery of talent that has gone abroad requires the utmost imagination, sympathy and courage on the part of planners for development. The nonavailability of sophisticated equipment, latest books and journals, suitable placement, etc., are just excuses for the flight of talent. The provision of these for the fundamental researcher is an imperative need which can be met. We know how scarce money is being misspent and so the recessary funds can be found for the retention and encouragement of native talent.

These defects which relate to recruitment, retention in service, retirement etc. and remind one strongly of Parkinson, do not get the attention they deserve, since there is very little enlightened public opinion to detect and decry this evil. We have placed many carts before horses since independence, but the most impressive of such performances has been the introduction of a universal adult electorate long before universal education even as a policy could be launched. But it must also be remembered that mere formal education is no guarantee of the will to ask for freedom or insist on efficiency.

Developing societies currently have not resisted fashionable ideologies generally wanting to be in one ideological bandwagon or another. This has been partly necessitated by the need to communicate with illiterate electorates on the basis of slogans and images. But while it may be permissible for the political managers of developing societies to indulge in the pleasant pastime of raising slogans, to imagine that this can be a substitute for scientific realization of development targets is irresponsible. For a country whose main pre-occupation is to rid itself of poverty, illiteracy and disease, the obvious aim should be to produce more wealth so that one could distribute more. That is a rational method of increasing production coupled with an equitable system of distributing the wherewithal for securing the necessaries of life need not necessarily involve a particular economic philosophy; and a parading of it involving considerable expenditure on such fanfare can well be avoided.

This leads directly to the question of the relation of the politico-economic philosophy of the planners to the universally desired social objectives. This philosophy which is very tempting to recently politically emancipated countries consist in either directly adopting a dictatorship or indirectly leading to one through an illiterate ballot

box. Dictatorship can generate and sustain factors conducive to economic production, for the latter as we have seen is a neutral function. But politico-economic arrangements in which the politician who is engaged in radical reforms has constantly to look over his shoulder to keep his conservative voter in a good mood is a dual function, one of which will wipe out the other. Either a total dictatorship or a total democracy can succeed, a clever combination of the two will fail.

The politico-economic national ideologies like democracy through the ballot box and welfarism through nationalisation are recent phenomena in the history of our country; and have counterparts in other parts of the world. Economic policies leading to expropriation generally yield the delight which deprivation of the other man provides to societies situated on the cultural no-man's land. This economic sadism is easily satisfied without reference to real economic development: a situation in which robbing Peter becomes an end in itself without necessarily leading to a payment to Paul. But there is a specially Indian situation in which the social malaise in this society is the product of ancient social injustices which currently need immediate and drastic remedy. Hence the widespread desire to establish what is called 'social justice'. Apart fron legitimate doubts regarding the historicity of ancient injustices it must be admitted that the current remedial measures create new injustices and the communal hierarchy is developing into a new form of snobbery it is attempted to be stood on its head without altering its verticality. Hence the evil of the system is retained while particular individuals or groups become victims of mass fury, like Cinna the poet. This can be treated as an inconsequential pastime for the current managers of Hindu society, except for its impact on the development process. The development process especially when it has to tackle the basic problems of a backward society and has to achieve its evolution into a modern society, is concerned with the pooling together of all available talents and other resources and harnessing them to the supreme task of constructing a self-generating modern industrial society. But if simultaneously one is committed to the denigration of traditionally educated groups for the alleged benefit of the rest, the immediate consequence can only be to deprive the national endeavour of currently available talents. The attitude of mind behind these commitments to social justice instead of being motivated by love of certain groups in course of time becomes merely the hatred of the rest. This philosophy of social hate while creating rifts among intra-social groups perpetuates class and caste and all the consequences of these divisions. Managers of election to political bodies find castes and communities readymade pressure groups in our polity and want to retain the prestige of caste so that it can be used for propaganda and vote catching during elections. Hence there is every provocation for the continuance of the caste-based social arrangements which because of their undemocratic nature inhibit egalitarianism, the hall mark of both democracy and socialism. The difficulties arising out of national allergy to disciplined work, and the ideological inhibitions are no doubt fundamental but cannot be considered insoluble; for a new outlook on public affairs can be created by sustained and purposeful education. This can no doubt be objected to on the ground that this will amount to brainwashing a whole nation to secure group interest. This may, however, be counted by saying that any execution of a public policy will have to be governed by an appropriate philosophy and the spread of this philosophy can always be called a totalitarian procedure; but this risk will be reduced to a minimum only in a liberal polity wherein policy decisions depend not so much on rigid ideologies as on situations on hand as they evolve. Rigidity in approach to development problems stultifies achievements.

The most important inhibition to development is the ubiquitous corruption. Corruption has a wide connotation. Greasing of the palm is but an aspect and a minor aspect of that of corruption, and nepotism does not exhaust the area of corruption either. The corrupt mind is that which is either active or inactive unjustly. Rules and regulations may or may not be broken, but corruption can continue under the guise of legal permissiveness like working to rule, tax evasion by appropriate distribution of income etc. Every body *insisting on doing a minimum of work* as a reluctant alternative to doing no work can lead to administrative stagnation which tell upon development. But the worst form that corruption can take is to encase it in ideological capsules. Corruption can be due to poverty uninfluenced by principles, selfishness free from patriotism, and above all sheer habit suffered *by authorities also by sheer habit. This habit having become universal it is* often difficult for most people even to recognise it. The habit is so ubiquitous that the occasional idealist miserably fails against it, if he does not become its victim. There are unsuspected areas wherein the corrupt mind works to the detriment of the good of the nation, like recruiting authorities choosing ill qualified people for jobs by suffering them to continue and by preferring them to the competent ones. Corruption creates a vested interest in mediocrity. The political scene is obviosly most corrupt, since it is an area in which for the sake of personal advantages, consciences wherever they exist, will be smothered. The total effect of corruption on the development process is total.

There is another way in which the mind is corrupted. That is, by developing a national indifference to the legal process. The contempt which law makers have for the supreme law is matched by the contempt the common man has for the ordinary law. It is fashionable to exalt arbitrariness as an *indication* of enthusiasm for a righteous cause. When the whole nation considers laws as a dispensable luxury the consequent laxity is the foundation on which corruption safely rests.

The bureaucratic structure which is held together by the red tape inhibits not merely quick decisions or prompt execution of decisions, but even destroy the capacity for any decision. Decision-making is not easy especially when it is known that any decision is bound to affect adversely a few and no universally satisfactory decision can be taken. The act of decision becomes always difficult and often impossible. The bureaucratic way which helped the imperial government impedes the national government. It is objected to and changed only when somebody's personal interests are involved.

Development planning has to be based on statistical data of some sort or other. These data are obviously needed for purpose of cost calculation and target fixation. But the public service, the innumerable tentacles of which are employed for the discovery, collection and presentation of data has familiar ways of not doing its job. It is well known that under heavy pressure and due to a lack of sense of responsibility these figures are very often rigged. In a country of the size of India and even in States of the size of Tamil Nadu, the consolidated figures assume enormous proportions. Even slight errors at the basic level of data collection can lead to considerable error at the summit. It is true that in planning we are more concerned with approximation and probabilities than precise figures. But if the figures mislead, as they seem to have done at least in the case of family planning, the very purpose of planning can be defeated. In development planning we have three points requiring integration : 1. The level at which data are collected ; 2. The desired targets based on these data and 3. cost calculation. If errors creep in at points

one and/or three, point two will be distorted. Points 1 and 3 are usually safe guesses and this kind of error at points 1 and 3 is being systematically committed by the agencies which advise planners. There are two ways of getting over this difficulty. One is to invent a device which can secure absolutely correct data. This option does not seem to be available. The other is to abandon macroplanning, that All India planning and resort to microplanning for which a viable, small zone like a district will be the unit. It must be remembered however that there are undeniable disadvantages in microplanning like having to correlate All India funds with local targets. But if any planning is to be goal-oriented as it ought to be, a choice will have to be made between realisable targets and unrealistic philosophies. The most disconcerting thing however is that when errors creep in and targets are not reached, the usual reaction in our country is to deny the error and imagine the achievement instead of locating and removing the error and punishing as appropriate those responsible for it.

But above all, one must remember that the planning elite in our country are, from the point of view of the average villager (who after all represents this country even now), are strangers who culturally 'come from afar' and have before them exotic models and wish to make India in the image of one of those models. If planning means merely planning for food and other creature needs of man and nothing else, and if educational planning means only planning for literacy, no one can object to any kind of planning provided it can achieve desired goals. But education is a sensitive area in which the national personality has to be preserved even in the context of modern development. I do not know of many countries which have succeeded in doing this. In our country particularly modernism breaks so sharply with our past that a reconciliation between the two is more easily spoken of than practised. A realistic planner as in the case of Turkey under the Atta Turk or the communist countries will have no patience with the relics of the past. But if one wants to carry the past into the future the incongruity can become painful and planning infructuous.

To conclude, the inhibitions to development come from all sections of society, who among themselves seem to be working at cross purposes and each defeating the others' endeavours. In fact the lack of a single national philosophy for the area under planning and an honest corps of workers at all levels to help materialise this philosophy seem to be the biggest handicap collectively to development in the larger sense of the term.

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In the discussion of the paper on Thursday May 25, in the Seminar Room of the *Madras Institute of Development Studies*, under the chairmanship of Mr. T. R. Venkataswami, Professor of Economics, Presidency College, Madras, the author restated the two basic propositions on which his analysis rests. First there is a choice between a rational system of development which starts with certain values at the top and works down to the base and an empirical system which starts with where we are at the base and works up to the top of the pyramid. In the Country and the State we have the first system which is trying to adapt itself to the second and causes the situation portrayed on the paper. Second the objectives of the development system are not clear and the result is a lack of faith in and lack of understanding of what is happening. This explained in his view the fact that there is no area of life which is not pervaded by corruption.

There was in general a strong reaction to the apparent negativism of the paper which is a diagnostic essay. Many parts of the diagnosis were called in question. In regard to universal adult franchise preceding universal education, the question of which is the cart and which is the horse was widely debated. The franchise itself is an effective form of education. Again the obstacles to family planning are not peculiar to Indian Society but are found in all poor societies. The relationship between population growth and poverty should not be lost sight of, which means that family planning obstacles are not simply a cultural backlog. Sanitation and hygiene are matters of tradition but they are equally a function of the lack of water which characterise rural life. In the State there are more than 6000 villages without even drinking water supply. Similar questions were raised with regard to vegetarianism where the census statistics show that 10 per cent of the population are vegetarians. This means again that vegetarianism in the country is a function of poverty.

Questions were raised with regard to the role of religion in the development process and the social stratification of the coutry. To some religion and its other worldly values are an anti development force and should therefore be helped, gradually to fade away. To others religion was a positive or a neutral element in the process of dynamic development and its values need to be nourished and diffused in the interests of modernisation. The discussion with regard to caste has been a divisive force in society, has been an offence against human dignity in giving rise to the outcaste peoples, has been a promoter of a hierarchical system which denies the equality and fraternity of man, is a continuing obstacle to the mobility of labour—in view of all this the caste system must be abolished and replaced by a more humane and social meaningful means of individual and group expression. To a few in the seminar, the caste system is a uniquely Indian Social structure enabling each individual in this second largest country in the world to maintain his individuality and retain his identity. Its exaggerations, abuses and misuses are susceptible of correction, and should be modified in a manner similar to the changes made in all forms of distortion in any given social institution. Otherwise there would be the danger of throwing the baby out with the bath water. It was also felt by some that the caste system should be retained only for political purposes, for use in the functioning of democracy. Others felt that the essence of caste being the superiority of one group over another, to suggest a reform of the caste system to bring about a recognition of human equality is a contradiction in terms. Such a reform will be the end of the caste system.

The diagnostic nature of the paper naturally raised more queries, than offered solutions. In fact there are no solutions proposed in the paper except a vague hint that we should move in the direction of an authoritarian society to overcome the inhibiting factors. Why is there non-co-operation with the authorities? Some challenged this assertion in view of the full co-operation forthcoming from the villagers in the new agricultural technology. The High Yielding varieties have become a way of life with the farming community. In any case, what are the means and methods of promoting co-operation and over-coming non-co-operation? What are the values that should be developed in our society against those inhibiting its development? What are the solutions to the inhibiting factors so vividly portrayed? These were the insistent and repeated questions provoked by the paper.

There was general agreement that a diagnostic analysis is meant to provoke discussion and not to offer solutions. In that sense the negativism of the paper has a positive aspect. Its basic thesis that the modernisation assumption on which our development planning rests is a highly questionable assumption—this is probably true. We have no means of proving that our traditionalism is passing and that reason and science are replacing it. From this point of view the paper is a challenge to all social and human scientists to go to work to gather data on this unexplored hidden sector of our society, our cultural attitudes, our social structures and convictions, our attitudes to reason and science etc. In this area we have no statistics and no analysis. We do not know and so we cannot act.

A further conclusion suggested by the paper is that in the development process there are no carts and no horses, no chickens and no eggs. A simultaneous attack has to be mounted on all three fronts, the economic, the cultural and the institutional, in order to overcome the inhibiting factors. On the economic front the economist, the scientist and the engineer must devote themselves to fighting the poverty battle and raising the living levels of the poor majority which will also be the surest way of changing cultural attitudes. The cultural values and mores must also be investigated and brought out in the open in order to promote a system of modernised scientific values which will both be preached in public and practised in private. Side by side there is need to break down the existing structures of feudal and financial powers in order that there may be the widest popular participation in all forms and processes of decision making. In other words this paper on the inhibiting factors is a call to action on all points in our society.

HOUSING AND NATIONAL DEVELOPMENT*

Housing Needs

Housing is an important consumption good in India. How can it be otherwise in a situation where as the 15th round of the National Sample survey Shows, 14 percent of our rural people live with 12.5 square feet of floor space and another 29 percent with 37-1 sq. feet, when 50 square feet of floor space per person is the minimum. In our urban areas the situation is worse. The NSS survey shows 21.3 percent live with a space of 25 square feet.[1] According to the report of the working group on Housing for the Fourth Five Year Plan around four fifths of our rural people live in kucha structure, with mud flooring and walls and roofs built of grass, reed and thatch. About 2 percent of our people live in pucca houses with plastered flooring, brick walls and concrete or file roofs.[2]

This consumption aspect of housing is also the means of establishing the housing needs of the country and of Tamil Nadu. The consumption aspect can be defined broadly as the United Nations does : Steps should be taken to assure universal recognition of the fact that access to housing is a fundamental human right and that no individual should be denied housing or benefits related thereto on the basis of ethnic origin, beliefs, age, sex, social or economic condition nor should the cost of housing require an unreasonable share of the total family income.[3] In this definition, housing needs computation involve two exercises. First a simple calculation of the actual housing progress in a Plan period as in :

$$I = \frac{Ug(t) - X}{Y} \times 100$$

where

Ug (t) = the houses to be built in the plan period

X = the houses needed during the period

Y = the back log of housing needs.

The second is a computation of housing as part of the physical and social services of the community—such as water supply for each house, number of hospital schools and class room space, markets etc., needed in the housing area. Here the consumption aspect is integral—to provide a house to a family without drinking water, schooling, marketing and health facilities is no progress. Under such conditions progress in housing is measured integrally as progress in social and physical services as in :

$$I_s = \frac{S(t) - Sr}{St} \times 100$$

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* Extracts from a paper written by Dr. Malcolm S. Adiseshiah to All India Seminar on Housing, Ootacamund, May 1972.

1. Fifth Round of National Sample Survey—CSO, New Delhi—1960.
2. Report of the Working Group on Housing, Planning Commission, New Delhi-1968.
3. Report of Ad Hoc group of experts on Social Programming of Housing, United Nations, New York-1971.

where

1_8 = index of progress in the sevice in the year

S (t) = number of servicc units realised in the same period

Sr = number of service units required to meet the needs of the population.

St = back log of service units.

For my purposes, I shall use a simpler method to compute our housing needs in both the above senses. The Indian Institute of Public Opinion[4] estimates that to provide every one with a minimum of 50 square feet of floor space by the end of this decade, Rs. 6,885 crores will have to be spent for rural housing, Rs. 4,910 crores for urban housing, plus Rs. 2,500 crores for rural and urban housing replacements and Rs. 3,565 crores for non-residential housing, that I have called physical and social services. The total housing investment is thus Rs. 17,830 crores. This is computed as follows :

1959—60	House holds			
Per Capital Floor Space	Rural		Urban	
(Square feet)	Actual	Cumulative	Actual	Cumulative (percent)
up to 25	11-61	11-61	15-51	15-51
26—60	25-42	37-03	28-94	44-45

The rural housing gap is 37-5 square feet for 14 percent people and 12-5 square feet for 29 percent for a rural population of 543 million by 1961. The cost of construction is estimated at Rs. square feet. The urban housing gap for an urban population in 1981 of 152 million is computed at Rs. 30 per square feet. This means housing investment which was 2.3 percent of national income in the Second Plan, 1.8 percent in the third plan and 1.9 percent in the three Annual Plan, 1.8 percent in the Fourth Plan will have to be 4 per-cent in the Fifth and 5 percent in the Sixth Plan.

Another computation of our housing needs based on the report of the working group[5] is :

Housing back log	= 718 lakh units
Annual Housing needs (at 1.3 crore population increase as in 1972)	= $\frac{27}{745}$ lakh units

Against this 745 lakh housing units needed, we are constructing 2.8 lakh units, which is about 2 pucca houses per 1000 persons per annum (compared to 10.3 in USSR 7.2 in Japan).

In the State we were 60 lakh houses short in 1961 and by the end of the Fifth Plan back log would have mounted to 90 lakh units. The State Housing Board is constructing 6,650 housing units during the current Plan and the Slum Clearance Board Plans to replace the 600 slums in Madras City by the eighties with tenements.

4. Monthly Commentary, Annual Number, 1970, 11 PO, New Delhi.

5. See footnote 2.

Against this kind of background it must be admitted that there are no really effective plans to meet our housing shortage—either the annual need for 27 lakh units or the backing of 718 units. Even the Bhagvati Committee's interim report proposing short term measures for employment generation makes guarded recommendations on housing. They start with the 22nd round of the National Sample Survey which records an annual construction of 0.65 unit per thousand persons or 2.6 lakh new houses in 1967-68 estimate that in 1971-72 construction has been 0.7 unit per thousand persons or 3.1 lakh units and recommend that for 1972-73 we should move to 0.8 unit per thousand persons or 4.1 lakh units. This modest programme would involve for the last two years of the Fourth Plan an investment of Rs 231 crores (Public sector housing in the Fourth Plan provided for a mere Rs 237 crores).[6] In other words our most forward looking plans will involve us in not meeting even 20 per cent of our annual housing needs and not even 8 percent of our housing demands. Why is this? Why have not the resources been found to meet this important component of our welfare? It is because as a consumption item it has been given a low priority in our Five Year Plans?

Housing as a Development Input

Housing as one of the nine major constituents to our standard of living is the second most important component of peoples welfare. And the welfare of our people is after all the purpose and object of all our planning and development. Why then have our major investment resources been directed to industry and its related infrastructure during the first three Plans, with an equal priority to agriculture in the Fourth Plan—to the almost total neglect of housing. I find part of the explanation in our reliance on Western development models wherein contain sectors like housing tend to accommodate themselves over the long period to the level of population, corrected for real income and tastes.[7] The British model is ever present in our minds with its inter relationship between population and occupied houses. The sector classfication based on the strategic role of a sector vis a vis over all growth rate places housing not in the primary growth sector, nor even in the supplementary growth sector but in the derived growth sector, where movements are a function of industry, real income and population. In such economics, periods of slow rates of growth are associated with high levels of investment in residential housing.[8] An analysis of the secular trends in housing in developed economies might, however, rise questions as to the generalisations set forth above. In the economies of Tamil Nadu and India, there is, I believe, a case for considering housing as belonging to the supplementary growth sector for several reasons and not being only a derived consumption good which it is to day.

Housing as a Means of Generating Employment

Housing in our economy is employment generating. Around 30 percent of housing expenditures is on wages and assuming average wages of skilled labour at Rs. 5.50 per day and of unskilled labour at Rs. 3 per day, Rs. 100 crores of investment will provide employment for 1,00,000 persons in the building industry and around 1,50,000 persons in ancillary occupations of furnishing, fixtures, etc. It is on this basis that the Bhagwati

6. Interim Report on Short term Measures for Employment, New Delhi, 1972.
7. The Process of Economic Growth; W. W. Roston, Oxford 1960.
8. Migration and Economic Growth : Brinley Thomas, Cambridge, 1954.

committee computes an employment of over 5,00,000 workers—skilled and unskilled—during the last two years of the Fourth Plan for an expenditure of Rs. 230 crores.[9] If the Fifth and Sixth Plans provide for the estimerted minimum needs of the State and country, including the back log as computed earlier, at Rs. 17,830 crores, the employment generated by such an investment would be of the order of 34 lakh workers per annum during the Plan periods. Such an employment programme will deal with 25 percent of our unemployment situation. In other words, an adequate housing programme is not only a major component of our national and social well being, through its massive employment creation consequences, it is also an important weapon for the attack against poverty.

Housing as a Force of New Capital Formation

A housing programme of net capital formation. Among the disequilbrea that our economy faces, the contribution of the rural/agriculture sector to net capital formation is currently rather seriously limited. Surplus rural incomes due to the new agricultural technology and higher land value accruing to the large agriculturists are variously estimated at around Rs. 5000–6000 crores. A planned housing programme would be one means of attracting these resources to this development area and might be an effective instrument against benami transactions, speculative holdings and black dealings that constitute a serious contributory to the inflationary pressures on the economy. The only constraint in heating housing investment as part of capital formation is its rather high capital—output ratio. Taking into account public building schemes such these connected with primary health centres, schools, branch banks, markets, committee offices, handling yards, shelters, godowns as well as residential buildings in urban areas, the capital–output ratio in this sector works out 5 : 1. The overall desirable national target in this regard is a return to the capital–output ratio of the First Plan-2 : 2 and away from the rising trend in the subsequent plan periods-3.0 in the second, 5.4 in the third. To achieve the target, emphasis should be on rural housing with its lower ratio, together with a ceiling of 25 percent of the total net capital formation of the country to be used for construction purposes.

Mobilising Resources for Housing

The housing programme calls for mobilisation of resources. Earlier references have been made to surplus rural resources which could be mobilised for the programme. There is a desire on the part of the new affluent rural groups to improve their housing conditions but this desire is not put into effect because of institutional lacks. The institutional frame for the development of housing programme, particularly in our rural areas include five imperatives. First the expansion and universalisation of the programme of homestead rights to landless labourers, the programme of Kudiarappu as it operates in this State. This is the first essential base for the success of the housing programme. Second the development of rural housing boards similar to the State Housing Boards which through their offices at the block and panchayat level can assist the rural people with the planning, designing and construction of their residents. Third there is need for development of the financial structure for rural housing through a rural housing finance corporation as the *Bhagvati* committee recommends or through vesting in the rural and urban Housing Boards powers to operate a revolving fund provided by the State and helping in mobilising resources from our financial institutions in the country. Fourth not only should

9. See footnote 6.

finances be mobilised and total resources made adequate for the planned housing programme, the financial procedures and means for acquiring a house site and for building thereon should be within the means of the poor and lower middle classes in rural and urban areas. It is curious that in the affluent countries, the system of mortgages, capitalised rental charges and long term soft loans attract housing construction on a massive scale. In our poor country a person has to invest all his savings and enter deep into debt to construct a house. There is need for accepted financial procedures to promote low cost housing in the State and country. In Tamil Nadu, the State Housing Board and the Syndicate Bank have inaugurated a house acquisition and building programme for low income groups. This programme called the daily deposit scheme enables each prospective house owner to deposit one Rupee a day in the Syndicate Bank for five years, when the house becomes the property of the depositor, who is then enabled to pay the rest of the price in easy instalments over 15 years. The Bank arranges for convenient deposits and for door to door collections. This is the kind of system of financial procedures and incentives that need to be generalised in the country as one means of meeting our housing needs and making housing a development input. Finally with the growing food surpluses in the country, a start can be made in the use of our food surpluses in accelerating the rural housing programme. The wage component of this programme has been set at 30 percent. 50 percent of this component could be paid in wheat or rice and the 50 percent in cash. Such a means of financing the programme will be anti-inflationary in that the incomes it generates will be a fraction of half percent of GNP and the additional housing constructed will be more than the money spent on it, thus lowering the capital output ratio problem referred to earlier. There will be some residuary inflationary effect from the food support prices policy followed by the government. But this is inescapable in any use, of our growing food surplus when used to generate employment and income.

THE SECOND CENSUS OF SOCIAL SCIENCE RESEARCH IN TAMIL NADU

The Second Census of Social Science research in Tamil Nadu follows the First Census reported to Volume I No. 6—the first special number of the Bulletin in July 1971. This second census reporting on 118 research projects in the State, is still not complete in its coverage, as some colleges and Research Institutions have not responded to the questionnaire. The questionnaire was addressed to 5 Universities in the State of whom 3 sent in the requested information; 20 colleges who are registered for Social Science research of whom 9 provided information; 2 Institutes of Rural Higher Education who submitted information; 7 Research Institutes of which 2 replied with project information. In the case of colleges, it may be that colleges which have not replied have no research under way. The two universities which have not replied are only marginally involved with Social Sciences. It is with regard to the Research Institutions over 50% of whom have sent in no information, that the census is incomplete. Only two Women's Colleges, Sri Avinaslingam Home Science College and Fatima College have reported fully this year.

Within these limitations, the areas of current research show, Economics being way ahead of the other Social Sciences, with 40 projects under way, Home Science 36, followed by Psychology and History and Politics with 11 and 8, Education and Social Work 5 each and Philosophy and Sociology 4 each. There is need in the State for the spread of research in Sociology and Anthropology, which is completely absent, and in Education.

The Economics research projects leading to a research degree reported seem to be heavily weighted in favour of empirical studies of a rather simple kind. Too many of the Economics research projects are involved in primary data collection. It is no function of the Economics researcher to engage in primary data collection for which he is not trained and in which he has no competence. Such activity will only distract him from his analytical and theoretical work, which should be an integral part of the study. This means that for the testing of his hypothesis he should rely solely on secondary data. Social research in which 5 projects are reported are well conceived depth studies. Home Science research has a wide empirical sweep of the spectrum of the home, health and educational foundation areas. The research programmes in Psychology have a quantitative depth and a theory frame in each case. This may well be a case that with current staff resources any quantitative expansion may be at the cost of qualitative development and application of theory. The area of Psychology seems to be breaking new research ground.

In the absence of responses from some of the Research Institutions, it is difficult to judge the amount and quality of developmental research in the Social Sciences under way in the State, particularly in view of the recommendations of the 1971 September Seminar on Consumer/user oriented Research see Vol. I No. 9 of the Bulletin. Here again most of the Institutions have just been established, being 6 months to 18 months of age. It is hoped that the third census next year will give a more complete picture of their studies and research designs.

On the whole, the canvass of Social Science Research in the State set forth in the Second Census reveals a sombre tone. Judged by any yardstick such as the total cost in relation to plan expenditures in these areas, or the number of scholars in relation to the University Community or the research expenditure as percentage of State net product, the Census shows the long way the academic community and research institutions have to travel for the State to have a viable research infrastructure both to promote academic excellence and the development of the State.

I. ECONOMICS

Madurai University — Dept. of Economics

1. Municipal finance in Madurai District since 1950 :

To study the growth, income expenditure pattern with critical analysis of the resources of finance of seven municipalities in Madurai District and it is anticipated that the truths relative to Madurai will be applicable to the country.

Commencement — 2-1-70.
Completion — December 1973.
Degree — M. Litt.

2. Economic growth of a region :

An examination of the economic growth of a region in particular in Tamil Nadu from 1953. If possible, an econometric model of the behaviour of growth in the region is to be attempted. The analysis is in terms of the Keynesian Macro economic model type. A formulation in terms of input-output techniques is also contemplated.

Commencement — July 1972.
Completion — July 1974.
Degree — Ph. D.

3. Mathematical Economics :

Operation's research approach to Industrial Analysis : The objective is to develop an operations research approach to the study of Industrial operations. By drawing certain required tools from Economics, Mathematical Economics, Econometrics and Statistics, a scientific method will be developed for the optimum choice by a multiproduct firm.

Commencement — 24-1-72.
Completion — January 1977.
Degree — Ph. D.

4. Financing of Agriculture in Madurai District :

To evaluate the extent of demand, the extent of supply, the pattern of utilisation of agricultural credit and to identify the problems of agricultural credit of various credit institutions in providing credit.

A sample of 15% of the villages and from each village 20 to 25 families are to be selected.

Commencement — January 1971.
Completion — January 1973.
Degree — M. Litt.

5. *Textile Industry in Madurai District* :

The growth of Textile Mills and its trends (1956–70) with regard to capital output ratio, Labour output ratio, capital productivity, and labour productivity, Marginal productivity of Labour, Capital and raw materials through coble, Douglas Production function and Managerial efficiency, Financial and profitability position of mills through Ratio Analysis are to be studied.

Commencement — 17-8-70.
Completion — 17-8-72.
Degree — M. Litt.

6. *A study of Cost-Benefit analysis of University Education in Tamil Nadu* :

To find the School costs and opportunity costs of various courses in Tamil Nadu, to calculate the returns of courses over a period of 25 years and to estimate their internal ratio of return. School costs collected directly from present students and opportunity costs from the Directorate of Employment and Training, Madras.

Commencement — 16-8-69.
Completion — 4-10-71.
Degree — M. Litt.

7. *Cost-Benefit analysis of Family Planning in Madurai District* :

To find out the total cost of the programme in Madurai District, total number of births prevented, the monetary benefits of births averted and the socio-economic characteristics of the adoptors. The data for costs etc. will be collected from the eligible couples register and for calculating the number of births averted the methodology is that formulated by Dr. S. N. Agarwal and Venkatacharya.

Commencement — 13-11-71.
Completion — 13-11-73.
Degree — M. Litt.

8. *Productivity and Wage trends in Select-Industries of Tamil Nadu* :

To find out whether workers deserve wage increases on the basis of their contribution and whether there is a close link between wages and productivity. Theoretical analysis of factors influencing productivity and wages is to be followed by a survey of select industries in Tamil Nadu.

Commencement — 1-1-72.
Completion — In progress.
Degree — Ph. D.

9. *The Sivakasi Match Industry :*

To study the less organised privately owned/operated Match Industry of the hand-made sector in and around Sivakasi for a radius of five miles.

Commencement — October '70.
Completion — October '72 to October '74.
Degree — M. Litt.

10. *A quantitative Economic analysis of allocation of resources in Tamil Nadu :*

To help the Planning Commission in the allocation of resources in Tamil Nadu. Several objective functions (welfare, National income etc.) are considered and different allocations are suggested. Linear programming methods, input-output methods and Econometric methods are used.

Commencement — October '71.
Completion — October '76.
Degree — Ph. D.

Scott Christian College, Nagercoil : Post graduate Dept. of Economics.

11. *Panchayat Raj and economic growth in Kanyakumari District :*

To study the economic growth of this District due to Community Development and Panchayat Raj, stressing the growth indicators in agriculture, industry, education and Tourism.

Commencement — June '72.
Completion — June '73.
U. G. C. Sponsored.

12. *Analysis of the history of the cooperative movement in Kanyakumari District.*

Commencement — June '72.
Completion — June '75
Degree — M. Litt.

13. *Cost-Benefit analysis of paddy cultivation in Kanyakumari* :

The introduction of new strains, cost evaluation, increased productivity and profits and the transformation from subsistence farming to commercial farming of paddy are to be studied.

Commencement — June '72.
Completion — June '73.
Degree — M. Litt.

Loyola College, Madras.

14. Unemployment in Madras City.

Madras Christian College, Tambaram.

15. Transfer of Technology in Indian Agriculture: To assess the part played by transferred technology in Indian Agriculture and suggest ways of improving the existing agricultural technologies. The method based on empirical study would compare the new technology with the old one and a model of technology would be evolved.

Commencement — 6-1-72.
Completion — March '75
Degree — Ph. D.

16. Entrepreneurship in Tamil Nadu:

The study is primarily historical, examining the development of entrepreneurship, the main purpose being to identify the factors which influence the pattern of entrepreneurship and to indicate their relative role in development of entrepreneurship. Examination of a few large scale industries in Tamil Nadu is contemplated.

Commencement — January '72.
Completion — January '76.
Degree — Ph. D.

17. Agricultural Economics:

A study of productivity in agriculture in relation to credit availability.

Commencement — January '72.
Completion — January '75.
Degree — Ph. D.

18. A study of progress of Indian Industries:

The main objective of the study is to measure and interpret changes in labour productivity in selected Indian Industries during the period 1948-65. The study uses the methods of Salter, Reddaway and Smith.

Commencement — January '71.
Completion — January '74.
Degree — Ph. D.

The Gandhigram Rural Institute — College of Rural Services.

19. Co-operation:

Study of (1) Dindigul Lock Workers Industrial Co-operative Society, (2) Dindigul Weavers' Production and Sales Society, (3) Chettinaickenpatti Village Agricultural Co-operative Credit Society leading to proposals for reform and reorganisation, by observation, perusal of records and focussed interviews.

Commencement — October '68.
Completion — October '69.

For the Santhanam Committee on co-operation, Madras Government, 1968.

20. Nationalisation of Banks :

To find out the extent of awareness of Bank nationalisation and relationship between such variables as age, education, income, banking habits and awareness on a random sample of households in ten villages.

Commencement — October '69.
Completion — November '69.
Sponsored by the Institute.

College of Rural Higher Education, Coimbatore

21. A study of factors affecting the economic conditions of the landless labourers in Coimbatore District in the context of agrarian changes. To investigate the nature of employment, quantum of work, wage rates, mode of payment, savings and level of living of landless agricultural labourers in Coimbatore District to identify the factors affecting the above conditions of the labourers and their migration and mobility, with special reference to the labour organisation and to suggest measures for improving the conditions. A multi-stage sampling design is to be adopted.

Commencement — 1-5-71.
Completion — 31-1-73.

Sponsored by the Indian Council of Social Science Research.

22. Co-operation :

The impact of branch-banking on the mobilisation of deposits and on credit services of Coimbatore District, Central Co-operative Bank. To examine the ability of the branches to mobilise and their service to depositors and societies. Survey method three-stage sampling is followed.

Commencement — July '72.
Completion — May '73.
Sponsored by the college.

23. Co-operation :

A base line survey of the Veerapandi Co-operative Credit Society. To find out the factors which can influence the activities of the co-operative society and to use them for the co-operative extension work. A two stage stratified random sampling was adopted to select members and non members for interview.

Commencement — November '72.
Completion — May '73.
Sponsored by the college.

Annamalai University—Dept. of Economics.

24. To study the capital formation in Agriculture with special reference to Tamil Nadu. By sample survey of capital formation in the agricultural region of Thanjavur District.

Commencement — 1968.
Completion — Progress
Degree — Ph. D.

25. ***Economics of Tobacco cultivation in Madras State.***

Case study of Tobacco plantations in Sivapuri Village.

Commencement — 1968.
Completion — —
Degree — M. Litt.

26. A study of the working of General Insurance in India during the post Independence period.

Commencement — 1968.
Completion — —
Degree — M. Litt.

27. Centre-State Fiscal relationship in India during the plan period. The study will focus on the impact of resources transfer upon the development of States in India during the plan period.

Commencement — 1970.
Completion — —
Degree — M. Litt.

28. A study of Tax Structure in Madras State focussing attention on the changing Tax structure of Tamil Nadu during the plan period.

Commencement — 1969.
Completion — —
Degree — Ph. D.

29. *A study of Panchayat Finance in Tamil Nadu :*

A sample survey of the finances expenditure and revenue pattern of 40 Panchayat Unions proposed.

Commencement — 1971.
Completion — —
Degree — Ph. D.

30. A study of fluctuations in Land values in Chidambaram Taluk-a case study of 5 villages of the tail end of the Cauvery delta.

Commencement — 1971.
Completion — —
Degree — Ph. D.

Madras Institute of Development Studies :

31. *Land reform in Tamil Nadu :*

The spread of the new agricultural technology in the State depends on the small farmer being able to hypothecate his land to obtain the needed credit. For this the title of the land cultivated by him should belong to him. The study will examine the manners in which the present land ceilings and tenancies acts are functioning, particularly in the dry farming areas and propose improvements and new legislation as appropriate.

Commencement — 1-1-72.
Completion — 1-12-72.
Sponsored by the Institute.

32. *Marketing of agricultural produce in Tamil Nadu :*

With the spread of new technology and the emergence of a cereal surplus in the State, the problems of marketing of agricultural produce become important. The study will examine the present marketing arrangements, the functioning of regulated markets and recommend on adequate system.

Commencement — 1-1-72.
Completion — 1-12-72.

Sponsored by the Institute.

33. A State-wide programme of low priced supply of rice, cloth and kerosene for the urban and rural poor. With rising prices, shortage in these wage goods and an undeveloped distribution net work, the cost of living for the poorest section of the people in the State become serious. The study will aim at examining the cost of a subsidised programme in these articles and the means of developing a sound delivery system.

Commencement — 1-1-72.
Completion — 1-12-72.

Sponsored by the Institute.

34. Utilisation and pricing problem of irrigation in Thanjavur District. The present irrigation net work in the Thanjavur district will be examined from the point of view of economic use of the water supply. The study will also analyse the economics of irrigation crisis and make recommendations.

Commencement — 1-1-72.
Completion — 1-12-72.

Sponsored by the Institute.

Institute for Techno Economics Studies, Madras

35. *Techno-Economic Survey of Ramanathapuram :*

The scope of the study covers technological audit of the resources of the district, the stage of growth already achieved, the direction, size and pace of the growth and the strategy schemes, projects and priorities for achievement of the envisaged growth.

Commencement — May '72.
Completion — October '72.

Sponsored by the Industries Dept. Tamil Nadu.

36. Viability of Dairy Farming in selected centres of Tamil Nadu, Kerala and Mysore. The objective of the survey is to study the economies of milk production in five selected centres in the Southern Region for different breeds and stable sizes of milch cattle and among different groups of milch cattle owners.

Commencement — September '71.
Completion — June 72.

Sponsored by the National Commission Agriculture.

37. ***The structure of cigarette industry in India*** :

The study traces the history of the cigarette industry in India—its past, present state and future trend; its capital and economic structure, rate of growth and forecasts of demand for cigarettes in India in the next ten years; export possibilities; and an assessment of the production factors and handicaps and suggestions to overcome them.

Commencement — June '70.
Completion — December '70

Sponsored by a private firm.

38. Medical Manpower requirements for the State of Tamil Nadu. The study was undertaken to assess the present and future requirements of doctors to man the teaching institution, primary health Centres, E.S.I. Institutions, Taluk Hospitals, District hospitals, and Family Planning Programme with reference to the development of Medical Education, Health programmes of the State during the Fourth Plan and also for recruitment of doctors in the Army during normal time and national emergency. The study was limited to registered allopathic doctors and dentists in Tamil Nadu.

Commencement — October '70.
Completion — January '71.

Sponsored by Directorate of Medical Education Tamil Nadu.

39. *Incidence of taxation in Tami Nadu.*

The object of the study is to measure the incidence of all taxes both central and State—collectively and individually on the urban and rural households. The study will estimate the income elasticity and buyoancy of individual tax and of the tax system.

Commencement — July '71.
Completion — June '72.

Sponsored by the Finance Dept., Tamil Nadu.

Fatima College, Madurai

40. *Agricultural income of landholders in Thiruvadanai area in Ramnad District* :

To find the means of keeping back the migrant villagers to the towns–to augment their income by improving the existing agricultural methods to find substitute employment with the natural and human resources available by Sample Survey of six villages by camping there with the students in three instalments.

Commencement — 1-7-69.
Completion — 39-5-70.

Sponsored by the college.

II ECONOMETRICS

Madurai University—Department of Economics.

1. Interstate comparisons of the pattern of consumption expenditure. The objectives of this project are to depict the consumption levels and patterns for broad commodity groups separately for each State by estimating suitable Engel curves, to test the regional variations and examine the rural-urban differentiation within a State. The analysis is based on the National Sample Survey data on consumption of 18th round.

Commencement — October '70.
Completion — October '72.
Degree — M. Litt.

III EDUCATION

Gandhigram Rural Institute—College of Rural Services

1. Socio-economic factors that influence the choice of teaching career among Teacher Educators in training colleges in the Madurai University area. To identify the socio-economic factors which make the Teacher-trainees choose training as their career, to find out the extent of influence of such factors and to assess their ambitions and aspirations. A group interview was conducted on pretested questionnaire and Chi-square test was employed.

Commencement — Nov. '70
Completion — Dec. '71
Sponsored by the Institute.

Auroville, Pondicherry

2. *Programme for village development*

To bring about a re-statement in educational method by recognising the importance of Shri Aurobindo's concepts of the four minds in education.

Commencement — 15th Dec. '70.
Completion — 15th Dec. '74.
Sponsored by the Institute.

Madras Institute of Development Studies.

3. Education of the Scheduled castes and tribes in Tamil Nadu. This study which will be financed by the Indian Council of Social Science Research is part of an All India survey of the education of scheduled castes and tribes students at various levels of education and the financing of the scholarships and hostel facilities made available to them. As back-ground the project will also develop an economic profile of the Scheduled Castes their employment opportunities, wage levels and forms of economic discrimination.

Commencement — 1-1-72.
Completion — 1-12-72.
Sponsored by the Institute.

College of Rural Higher Education, Coimbatore.

4. *Intelligence Test Construction* :

This project of constructing and standardising a group Verbal Test of Intelligence for the age group 7 plus to 17 plus is done jointly by this college Research Department, the faculty of Education of Kerala University, Institute of Education of Calcutta, and the Department of Psychological Foundation of the N.C.E.R.T., New Delhi under a scheme of co-operative Test Development Project. This is the fourth year of the project. During the first three years the procedures were finalised, research fellows trained, test booklets printed and pilot test administered to 1922 students of the age group in 39 schools in Coimbatore, Tirunelveli, South Arcot and Ramnad districts.

5. *Establishing norms for speed in reading Tamil in grades 2 to 5* :

This project meant for establishing norms for speed in reading Tamil in grades 2 to 5, was started during the year 1969-70 with the assistance of NCERT. After analysing the text books of standards 2, 3, 4 and 5, to find out the vocabulary, suitable passages were printed for pilot study, during the first year. The pilot study was conducted with 720 students from 4 schools. During the year 1970-71, of the 12 passages tried, 8 were selected for final test. The final tests were administered to 4,800 children in different types of schools in Coimbatore district. The tests were repeated to 200 students to establish reliability and validity of the tests.

IV SOCIOLOGY

College of Rural Higher Education, Coimbatore

1. A study of attitude of men towards Family Planning in Coimbatore District. To study the attitude of men towards the norm of small size family, spacing between children, raising the marriageable age of girls and vasectomy and to find the relation between socio-demographic and economic characteristics. A two stage sampling design was employed, the primary and secondary units being gram panchayat and eligible husbands respectively.

Commencement — Sept. '71.
Completion — May '72.
Sponsored by the College.

2. A sociological study of direct election of village Panchayat Presidents in Perianaickenpalayam Panchayat Union. To study the opinions of the public, Panchayat election members candidates and presidential candidates towards direct election system of presidents and to investigate the socio-demographic-economic characteristics of the voters and non-voters in the last general elections. The field survey method has been used

Commencement — 11-5-70.
Completion — In Progress
Sponsored by the College.

Annamalai University—Dept. of Sociology

3. A study of the impact of social changes on Rural areas with special reference to Chidambaram Taluk. To study the changes noticeable under (1) type of family (2) occupational mobility (3) adoption of better methods of farming (4) Literacy and (5) rural cohesiveness. 466 familes selected for study were divided into three categories viz. Scheduled and non-scheduled, Lower income and Higher income and literates and non-literates.

Commencement — 1969.
Completion — 1971.
Degree — M. Litt.

Fatima College, Madurai.

4. Study of the nomadic tribe Varuthathukkara in Ramnad District. This is an objective study to find ways of improving their income, health and other social conditions retaining the distinctive feature of the tribe, having travelled with them during six different periods and camped with them sharing their life.

Commencement — 1-8-70.
Completion — 15-12-71.
Sponsored by the College.

V PHILOSOPHY

Annamalai University—Department of Philosophy

1. Studies of the philosophy of Thiruvalluvar. A study of the philosophies that prevailed during his time is made. An ideal view of life as portrayed by him is attempted.

Commencement — 1960.
Completion — 1971.
Degree — M. Litt.

2. A critical study of six Tamil Siddhars.

The study is to bring out in a systematic form the philosophy of Siddhas, which is mainly based on yoga. The speciality of their philosophy is the preservation of the body and a practical approach to Salvation. They find God in man.

Commencement — 33-11-70.
Completion — 25-4-71.
Degree — Ph.D.

3. Gandhiji and the West.

A study in two divisions viz. (a) Influence of Westerners on Gandhiji (b) Influence of Gandhiji on Westerners.

Commencement — 27-10-69.
Completion — 27-10-72.
Degree — Ph.D.

4. A critical study of Marxian Philosophy in the context of its development. The aim is to throw light on the hidden contradiction of Marxism and also to indicate the historical necessity to redress the Marxian thought in accordance with the discoveries of psychology and advance physical sciences.

Commencement — 30-10-69.
Completion — 30-10-74.
Degree — —

VI HISTORY AND POLITICS

Annamalai University—Dept. of History and Politics

1. A comparative study of the Indian and American Federations. This is a historical and comparative study of the federal experiments made in the formative periods 1946 to 1956 in the case of India and the Federalist period in the case of the United States of America.

Commencement — 1969.
Completion — 1973.
Degree — Ph.D.

2. The role of Feudatories in Chola History based on the study of the inscriptions, literature and material remains of the Chola period.

Commencement — 1958.
Completion — In progress
Degree — Ph.D.

3. Toynbee's interpretation of Indian History.

Commencement — January '72.
Completion — In progress.
Degree — Ph.D.

4. Central-State relations with special reference to Madras since 1956.

Commencement — October '71
Completion — In progress
Degree — Ph.D.

5. Later Pandyas—Rise of the second empire of the Pandyas.

Commencement — 1956.
Completion — In progress
Degree — Ph.D.

6. The history of Franchise in India since 1861.

The main objective is to examine the development of the principle of Franchise from the date of Queen Victoria's proclamation of 1858 and to establish the role of Adult Franchise with its merits and demerits, and emphasise the need for proper qualifications of both voters and their representatives who shall then be able to bring into life "Democracy" worthy of its name.

Commencement — December '69.
Completion — —
Degree — Ph.D.

7. The attitude of Indian Parliament towards the United States since independence. To find out the opinion of the parliamentarians individually and party-wise, and the influence of parliament in making government Foreign Policy, applying Descriptive method.

Commencement — December '69.
Completion — —
Degree — Ph.D.

8. History of the Madras Legislature from 1909-47.

Commencement — 12-10-70.
Completion — In progress.
Degree — Ph.D.

VII PSYCHOLOGY

Presidency College—Madras

1. Creativity and Scholastic achievement. To find out the relationship of creativity to scholastic achievement among high school students. The Wallach-Kogan instruments of creativity, Raven's standard Progressive Matries and a suitable test of school achievement will be administered.

Commencement — July '71.
Completion — In progress.
Degree — M. Litt.

2. A study of the relationship between Achievement Motivation and Creativity. Lynn's Achievement Motivation questionnaire and Padmini's Biographical Inventory for identifying creative Adults were used for determining n Ach and creativity respectively.

Commencement — August '71.
Completion — March 72.
Degree — Project report for M.A. degree.

3. **Personality correlates of Fatigue.** The sudy attempted to find out relationship between personality and fatigue of the industrial worker. Fatigue was assessed with the Behavioral Fatigue Inventory and personality with the Edwards Personal Preference Schedule.

Commencement — August '71.
Completion — March '72.
Degree — Project report for M.A. degree.

4. A study of need satisfaction at two levels of management jobs. The study attempted to investigate the differences between Middle and Junior level management jobs with respect to need fulfilment, need deficiency and importance attached to some of the psychological needs.

Commencement — August '71.
Completion — March '72.
Degree — Project report for M.A. degree.

5. A study of job satisfaction among workers in companies high on motivators and those high on hygiene. The study attempted to test Herzlieg's two factor theory of job satisfaction. Wernimonts job satisfaction questionnaire was used.

Commencement — August '71.
Completion — March '72.
Degree — Project report for M.A. Degree.

University of Madras, Psychology Dept.

6. A quantitative investigation into the Semantic aspects of some political concepts. To measure the meaning of some political concepts and to study the factors influencing the meaning pattern in each political party, the relationship between authoritarianism and perceiving of affective meaning and the relationship between extroversion and meaning of political concepts.

Commencement — 1-4-72.
Completion — 1-4-75.
Degree — Ph.D.

7. Personality as a factor in suceptibility to persuasion. To find out the effectiveness or otherwise of different levels of fear arousal on personality with reference to certain personality predisposition. This is an experimental study.

Commencement — 1-4-70.
Completion — 30-4-73.
Degree — Ph.D.

8. A study of factors associated in scores on "Draw a Man Test", A correlation study of certain factors such as intelligence, personality, artistic attitude etc., with the scores on "Draw-a-Man-Test" is made. Conventional tests are used for the purpose and the middle school students are used as subjects.

Commencement — 1-4-70.
Completion — 1-4-73.
Degree — M. Litt.

9. Factors influencing the achievement of school. To find out the school related factors in the achievement of schools. Questionnaires, schedules, ratings are used as tools.

Commencement — 15-7-71.
Completion — 15-7-74.
Degree — Ph. D.

10. Psychological and Sociological aspects of murder : A study of murderers, their aggressiveness, intelligence and personality will be made and compared with normals. Case histories will be collected.

Commencement — 1-1-71.
Completion — 1-1-73.
Degree — M. Litt.

11. The effect of anxiety on Preparatory set. The effect of manifest anxiety on Preparatory set (Expectancy) is studied. Three new apparatus are designed to study Preparatory set. High school students are subjects.

Commencement — 1-1-69.
Completion — In progress.
Degree — Ph. D.

VIII CRIMINOLOGY

University of Madras

1. Psycho-social aspects of Recidivism.

A study of the psychological and social factors which lead individuals to commit crime and repeat the crime. The Eysenck Personality Inventory, MMPI-Pd and exhaustive interview technique are used. The subjects of the study are 100 first offenders from the Madras Central Jail and 100 repeated offenders from Salem Central Jail.

Commencement — 16-9-69.
Completion — 15-9-72.
Degree — M. Litt.

IX CULTURAL STUDIES

Auroville—Pondicherry

1. Towards a spiritual sociology.

To provide a common meeting ground for international, Indian States and Tamil Village culture in creative production with educational spiritual content.

Commencement — 1-10-71.
Completion — August, 74.
Sponsored by the Institution.

X ENVIRONMENTAL STUDIES

Auroville-Centre Environmental Studies, Pondicherry

1. Pollution free sources of Energy. To develop and adopt sun and wind power for a rural community for pumping water, drying crop, baking and for small cottage industries—changing from wood, cowdung and kerosene to natural sciences.

Commencement — August '71.
Completion — August '75.
Sponsored by the Institution.

2. Soil and water conservation in the Auroville area. Conservation of monsoon water as ground water instead of wasting into the sea, eliminating soil erosion. A near-surface ground water table will be created, supporting forest growth and intercultivation with minor irrigation, covering an area about 230 hectares.

Commencement — August '71.
Completion — In progress.
Sponsored by the Institution.

XI SOCIAL WORK

Madras School of Social Work

1. Incidence and detection of property crimes :

To study the incidence and detection of property crimes in a neighbourhood in Madras city by interviewing all the households in the locality by a structured schedule.

Commencement — 31-10-71.
Completion — February '72.
A confidential report for administrative use.

2. Integrated services for children and youth in Madras City:

To prepare a comprehensive plan for the healthy development and well-being of children, youth and families, by secondary data and survey.

Commencement — August '71.
Completion — In progress.
Sponsored by UNICEF.

3. Problems of the aged in Madras City:

To study the problems of the people aged 60 years and over in Madras City with particular reference to employment, retirement. family and other social relationships, economic situation and leisure time activities. 910 elderly people were interviewed using a structured schedule and area probability sampling.

Commencement — October '71.
Completion — June '72.

Sponsored by the United States Department of Health, Education and Welfare, Washington, D.C.

4. Rural development at Kelambakkam: (A research steady in evaluation)

To determine the extent to which the Rural Development Centre programmes could achieve its objectives and to ascertain the living conditions of the people of Kelambakkam and Sathankuppam to serve as basis for future planning method. Interviewed heads of all households in the two colonies and 36 house-holds from the two caste villages of Kelambakkam and Sathankuppam with structured schedules, discussion with 12 experts connected with the centre and studying the records.

Commencement — 31-12-68
Completion — March '69.

Sponsored by the Ticinese Faure Nel Moudo, Switzerland.

5. Three village—A community need study.

To understand the general economic conditions of villagers, to ascertain the existing agricultural practices, to determine the need of the communities with reference to agriculture and to explore the possibilities of fostering Co-operative efforts in agricultural and non-agricultural sectors of the rural economy, in order to explore the feasiblity of starting programmes for developing general living conditions of the people.

Commencement — July '70.
Completion — Aug '70.

Sponsored by the D'Homme A Homme, France.

XII HOME SCIENCE

Sri Avinashilingam Home Science College, Coimbatore

1. A study of the employment status of the Home Science Graduates of Tamil Nadu: A study of the scope for employment for Home Science graduates. A carefully prepared and pretested questionnaire was administered to 1025 members, who graduated in Home Science between 1968-71, to elicit information regarding the educational, employment and marital status of Home Science graduates.

Commencement - April '71.
Completion — March '72.
Degree — M.Sc.

2. Financial management practices of families with fluctuating incomes.

To find out whether farm families have any income-expenditure plan so as to understand the adequacy or otherwise of their spending plans.

The questionnaire schedule was prepared to collect the details of 200 agricultural families in Pollachi Taluk in Coimbatore District.

Commencement — April '71.
Completion — March '72.
Degree — M.Sc.

3. Effect of family size on money management :

To find out the influence of family size on management of family income, particularly in the areas of food, clothing, shelter, education, recreation, transport and savings and also to study the practices of giving pocket money to children.

150 families in Coimbatore city were interviewed.

Commencement — April '71.
Completion — March '72.
Degree — M.Sc.

4. Evaluation of storage facilities provided in 200 households in middle income group :

To understand the type and adequacy of storage facilities provided in 200 selected middle income group households. Household surveys were conducted through interview. Family background, layout of the kitchen, provisions made for storage of items needed in the kitchen, description of storage units, qualities of materials used, ventilation and lighting, aspects considered in the installation of storage units and arrangements of articles, care and maintenance of storage units, and problem in storage of various items were studied.

Commencement — April '71.
Completion — March '72.
Degree — M.Sc.

5. Contribution of family members to household activities :

To examine the home-making responsibilities shouldered by the different members of family.

In 200 families, whose income ranged between Rs. 1500, information on the socio economic status, standard of living, family budgets, family purchases and buying preferences was gathered.

Commencement — April '71
Completion — March '72.
Degree — M.Sc.

6. Extent of use of electrical appliances in 200 households in Coimbatore City :

To find out the availability of electrical appliances in Coimbatore market and their use in households in middle and high income group.

A schedule was formulated to collect details on the possession and use, purchase, care and maintenance and opinions of the homemakers about the use of electrical appliance among 200 homemakers.

Commencement — April '71.
Completion — March '72.
Degree — M.Sc.

7. Providing leisure time activities for adolscent girls ;

The objectives were to help students utilize leisure time profitably developing skills, increase opportunities for profitable enterprises, and to train young girls to increase and improve their organising abilities.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

8. Managerial practices of selected low income families in Coimbatore City :

To find out the managerial practices among selected low income families in Coimbatore city.

80 low income families in a Municipal colony in Coimbatore, identical in shape and size were interviewed.

Commencement — April '71.
Completion — March 72.
Degree — M. Sc.

9. Impact of urbanisation on adolescents' behaviour ;

To find out the behaviour of adolescent girls arising out of urbanisation. With the help of personal data sheet given to 580 girls, 140 were selected. The tools selected were self-concept inventory, descriptive words test and word transformation test.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

10. Family background versus problem behaviour of children of pre-school age :

To find out the relationship between family background and problem behaviour of pre-school children. 150 children from four schools in Coimbatore city were selected. Observation method was used to study problem behaviour.

Commencement — April '71.
Completion — March '72
Degree — M. Sc.

11. Survey of the status of pre-schools in Coimbatore :

To study the status of 105 pre-schools (70 urban and 35 rural) in Coimbatore. The interview schedule developed after pre-testing, included the details regarding the pre-schools, such as year of establishment, type of pre-school, source of finance, physical get up, Oritoria for admission aims and objectives, curriculum and programme, equipment, teaching methods staff, feeding programme, home-school relationship, records and problems faced in administration.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

12. Effect of pre-school education on the language ability of first grade children :

To study the role of pre-school and effect of pre-school education on children's language ability. A picture vocabulary test was devised. The sample consisted of 200 children (both sex) belonging to the first grade, 5 to 6 years old.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

13. Influence of pre-school on concept formation of children of 3-5 years :

To study the influence of age, sex and pre-school, on concept formation of 150 children 3-5 years old (50 in each group).

They were comparable in age, sex and socio-economic status. Both concrete and abstract concepts were chosen as bases in developing test times.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

14. Evaluation of readiness programme in pre-school in Coimbatore :

To find out the status of readiness programme in the pre-schools in Coimbatore and prepare and evaluate suitable reading material for pre-schools. 50 pre-schools in Coimbatore were selected and evaluted.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

15. **The influence of laboratory nursery school on the behaviour and problems of pre-school children :**

To find out whether or not the laboratory nursery school has more favourable influence on children's behaviour and problems than other types.

Observation method was used. Samples of 4 to 4½ year old. 15 boys and 15 girls were obtained from each of the nursery schools (Sri Avinashilingam Home Science College nursery school and Avila convent private nursery school). The interview schedule for parents was planned to elicit information on the age of the child, type and income of family, education and occupation of the parents, status of mother, status of child relationship with the family members and behaviour problem of child with reason and solution given by the parents.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

16. Prevailing practices with regard to breast feeding and weaning children in rural area :

To understand the infant feeding and weaning practices adopted by a selected group of mothers in a rural Community. Hundred infants (50 boys 50 girls) below 2½ years of age and their mothers were located and chosen on the sample. They were in three stages, as completely breast fed, partially weaned and completely weaned infants, of low income group families i.e. earning less than Rs. 300 per month.

An interview schedule was used to find out the feeding and weaning practices and the present dietary patterns of the children.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

17. Nutritional status and mental abilities of children of 3½-5 years :

To find out the relationship between the nutritional status and mental abilities of a selected group of pre-school children in the age range of 3½ to 5 in Coimbatore City.

Four groups of 20 children in the age range of 3½ to 5 years belonging to similar low-middle income families were drawn from different environments to contribute the sample.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

18. A comparative study of rural and urban couples' attitude towards parenthood:

To study the attitude of selected rural and urban couples towards parenthood and to suggest the curricula needed.

75 women and 75 men from the rural and urban areas were selected. A questionnaire method was used to collect information concerning parenthood and its importance, duties of parents towards their children, marital satisfactions, dissatisfactions in parent-

hood sources, awareness of planned parenthood, advantages and disadvantages in planned parenthood, preference for children in number sex and ordinal position and child rearing practices.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

19. Problem solving ability of first grade children :

To find out the problem solving ability of children studying in the first grade, in two schools in Coimbatore City. Objective tests such as Make, picture completion and Draw-a-Man-test were administered among 120 children, 60 boys and 60 girls.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

20. Factors influencing the adoption and non-adoption of Family Planning by the Rural home-makers :

To find out the factors which influence the adoption of Family Planning. The findings of the survey will be of great utility to the Health officials and to all those connected with this programme. Interview and observation methods used to collect information.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

21. Factors influencing the dietary practices and nutritional knowledge of rural home-makers :

To find out the factors which influence the dietary practices and nutritional knowledge of selected rural home-makers, who are one of the target groups in the national efforts for better nutrition. The interview schedule consisted of three parts namely (A) personal data (B) dietary practices (C) nutritional knowledge.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

22. Opinions of selected rural home-makers regarding radio programmes broadcast for women :

To evaluate the radio listening practices of rural home-makers with special reference to their opinion on the women's programmes, broadcast by the All India Radio.

Interview method was selected as the research tool consisted of questions regarding family background, possession and use of radio or transistor, programmes liked by home-makers, awareness about women's programme broadcast, women's programmes preferred by home-makers and information regarding Rural Radio Forum.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

23. **Awareness of rural women about the functions of their Panchayats in Periyanaicken Palayam block :**

To find out the extent of awareness among women and suggest ways and means by which the awareness could be increased and made meaningful.

The interview method was used to collect data from the 20 home-makers.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

24. Relative effectiveness of selected teaching methods singly and in certain combinations in imparting nutrition education in a rural school :

To find out the effectiveness of a few selected teaching methods singly and in combinations, in imparting nutrition education to a group of school going girls in a rural country.

Five methods! lecture, demonstration, exhibition, dramatization and visual aids were used. Girls studying in IXth Xth and XIth standards were selected from Swami Sivananda High School, Periyanaicken Palayam.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

25. A study of the activities of the selected Mahila Manrams in Coimbatore Dist. :

To study the existing status of the Mahila Manram Coimbatore District and bring out the factors which led to their success and failures.

The interview method was used for the study. The convenors, presidents and vice-presidents from 50 Mahila Manrams in Coimbatore Taluk were selected. Approximately 10 from each Panchayat Union.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

26. Views of selected block personnel regarding Applied Nutrition Programme in Tamil Nadu :

This study was undertaken to elicit the opinions held on the various aspects of the programme by the functionaries involved in the ANP in the different Community Development Blocks of Tamil Nadu with the co-operation of the Director of Rural Development and the project Nutrition Officer, Government of Tamil Nadu. All block Officials who were directly involved in the supplementation of the ANP were selected. The questionnaire prepared was for general details about the respondents, their concept about the

ANP and its operation, their specific role in the ANP, their opinions about the various aspects of the ANP, impact of the ANP and their suggestions to improve the programme.

Commencement — April '71.
Completion — March '72.
Degree — M.Sc.

27. A study of the pre-school feeding programmes in operation in Coimbatore district :

To examine the feeding programmes in action in the rural areas in Coimbatore District, in terms of their adequacy in quality and quantity, mode of operation, problems encountered, food distribution patterns, impact on children's health and parents' satisfaction and suggestions for improvement. The sample selected was constituted by the Balasevikas in charge of the programme and randomly selected mothers of five children attending each Balwadi. The total sample was 49 Balasevikas and 245 mothers. Interview and observation were the methods selected for collecting the data because of their several advantages.

Commencement — April '71.
Completion — March '72.
Degree — M.Sc.

28. Clothing practices of selected rural and urban families:

To compare the clothing practices in the field of amount spent on clothing, family clothing selection, mode of construction and care of clothing in the selected rural and urban areas.

The interview method was chosen to collect the data. 100 familes each from rural and urban areas having four and five members in each and an annual income of Rs. 3,000 to Rs. 4,800.

Commencement — April '71.
Completion — March '72.
Degree — M.Sc.

29. The extent of manmade textile fabrics in Rural Households:

The aims of this study is to find out how far this clothing practices of the rural families have been influenced by the man-made textile fabrics. The interview method and observation are part of the process of investigation. The survey was conducted in Narasimhanayakan Palayam, Palanigounder Pudoor and Appan Naickern Palayam since the selected areas were familiar to the investigation.

Commencement — April '72.
Completion — March '72.
Degree — M.Sc.

30. A comparative study of the clothing expenditure pattern of high and low income families :

To find out whether there is a relationship between income and clothing expenditure patterns, whether it is possible to forecast the clothing expenditure in terms of income groups, and whether there are factors other than income influencing clothing expenditure.

Two hundred textile consumers of Coimbatore city have been covered in this study. Questions were despatched to the samples through personal investigation process by the administration of interview schedule. Attention catching questions were asked.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

31. Consumer's awareness of locally manufactured Textile goods:

To see whether or not consumers are aware of locally produced textiles and how they select to maximise their satisfaction.

Two hundred families belonging to different income groups namely low, middle and high in Coimbatore city were selected for data collection. A questionnaire was prepared in a way that would enable the samples to give correct answers with a minimum of words and it included the family background, monthly expenditure pattern, clothing budget, purchase of clothing, major textiles and retail units preferred, purchase of locally manufactured textile goods, qualities applicable to locally manufactured textile goods, factors contributing to the popularity of textile goods, sources providing information about locally manufactured textile goods and the awareness of the consumers about the local producers.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

32. Scope for nutrition Education in the elementary school programme:

To throw light on the methods which are suitable for teaching nutrition to school children. 215 children of Sri Avinashilingam Trust Basic Elementary school for children were selected for this study. Questionnaire method was administered to collect data.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

33. Heights and weights of selected 1250 children aged 6 to 48 months in Coimbatore City:

To obtain data which can be used as basis for outlining meaningful nutrition and educational programmes for the type of population covered.

1250 children were chosen for the study. Bread was distributed to the children and their heights and weights were taken.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

34. A study of height and weight measurement 7, 8, and 9 year old children in selected schools of Coimbatore city:

To collect information on the height and weight measurements of 7, 8, and 9 year old children from selected primary schools in Coimbatore city, in order to arrive at local reference standards for children of the age covered.

Family background information of 2208 children – 1134 boys and 1074 girls was collected through a questionnaire consisting of monthly income of the family, size of the family, birth order of the child, childhood illness and also information on menu patterns, for three consecutive days.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

35. Availability to school children, of iron from amaranthus cooked in two different utensils :

To find out answer in Bover Block how far the enhanced amount of iron is available today, and to evaluate the availability to the children of iron, from amaranthus cooked in iron and aluminium utensils and supplemented to a school lunch.

Sri Avinasilingam Trust Basic Elementary School was selected for the study. 110 children in age group of 5 to 10 years, were divided into four groups according to their initital height, weight, haemoglobin level and age., Standardisation of the procedures for cooking and serving, selection and introduction of supplements, Assessment of the nutritional status of the children. Food consumption patterns and analysis of the nutrients were carried out.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

36. Nutritional status and nutrition intake including mothers of children in the age group of 0-30 month in a rural area :

This investigation in an effort in the direction of determining the prevailing weaning and feeding practices and the nutritional status of children from 0 to 30 months in two villages namely, Solampalayam and Vadapudur through anthropometric, bio-chemical and clinical methods. Orientilative food consumption data including breastmilk intake and information on the feeding and weaning practices of the target age group children were collected and analysed as basis for planning meaningful nutrition programmes. On the study arrived at evaluating the nutritional status and nutrient intake, including mothers milk of infants and children from birth to 30 months, children of the target age group from all the families resident in the two selected villages were included. A socio-economic-schedule was evolved to get information of the family background and the present socio-economic status of children from birth to 30 months of age. A dietary schedule was also used to obtain information on the feeding and weaning practices and beliefs. A modified form of the ICMR schedule for clinical assessment was also used.

Commencement — April '71.
Completion — March '72.
Degree — M. Sc.

Regd. No. M. 8831

MADRAS INSTITUTE
OF
DEVELOPMENT STUDIES
(M I D S)

The Institute founded and run by Dr. Malcolm S. Adiseshiah is a charitable trust registered under the Madras Charitable Trusts Act.

The aim of the Institute is to contribute to the economic and social development in Tamil Nadu and India.

The activities of the Institute are :

- Studies and action-oriented research in micro-development problems;
- Documentation and library service in development programmes;
- Exchange and dialogue at the State, National and International levels on development issues;
- Publication of papers and research results of the institute.

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